The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LX, No. 23 CHICAGO, ILLINOIS JUNE 7, 1913

MENINGITIS OF THE EPIDEMIC TYPE IN CHILDREN BELOW TWO YEARS OF AGE*

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The diagnosis and treatment of cerebrospinal meningitis in children below 2 years of age has become a very important problem. Without fear of overestimating our modern advances in methods of diagnosis and treatment, it may be said that in older children, between the ages of 2 and 10 years, this dread affection has been deprived of its many terrifying aspects. The disease in these older children is easily diagnosed and the treatment now in vogue with the Flexner serum has given the disease a prognosis in epidemic periods equal to that of a lobar pneumonia, and in sporadic cases even a better prognosis than the pulmonary affections. In sets of sporadic cases the outlook is not worse than in any of the ordinary affections of an infectious nature in childhood. The children and infants below 2 years of age often present symptoms which are misleading and, therefore an early diagnosis is not made in a number of cases. This would seem strange to some who, from the text-book description, expect a meningitis in a young child or infant to present certain definite symptoms. The diagnosis is often masked, the physician not even entertaining a thought of meningitis. It is the fear of making a lumbar puncture and finding a clear fluid normal in every way, with the consequent doubting attitude of those about the patient, that must deter many from performing this necessary aid to an early diagnosis. In no other way can we account for the large number of infants who are sent to the hospital quite late in the disease without any diagnosis having been made. Even in the hospital, with the young patient under our direct observation, it is often difficult to come to a conclusion before lumbar puncture. Particularly difficult are the cases in infants which are complicated with a pneumonia. Many cases of pneumonia are complicated with cerebral symptoms; there is the restlessness, the rigidity, the retraction of the head and the fever which continues a long time past the initial phase of the disease: Again, there are in young infants a number of cases in which the initial symptoms of fever and restlessness are not combined with any other symptoms, such as rigidity; or there may be a slight concomitant otitis to mislead us at first into the feeling that we are dealing with a purulent ear disease instead of a meningitis. The remittence or intermittence of a high temperature with increasing restlessness, and finally the appearance of neck-rigidity then shows us we have had a meningitis from the outset. In fact, many diseases of infancy, even a simple intestinal disorder, are so often combined with milder forms of cerebral symptoms that we can easily explain how a meningitis in younger children and infants is often overlooked. The physician is alive to the presence of a Kernig, but this is certainly absent in many infants and is of little value in the diagnosis of a meningitis. Again, the onset in many diseases is with convulsions or repeated convulsions, and it would be rash to conclude that in every such case a meningitis might be present. An observation period is therefore assumed to be necessary and then valuable time is unavoidably lost.

Therefore, the first impression we obtain in a study of a series of cases of meningitis in the very young is that in all cases we should never lose sight of the possibility of meningitis and that perfection and accuracy in diagnosis in these subjects are essential.

I say, without fear of dispute, that a day's delay in older children is not dangerous (as will be seen from a study of the subject), but the same delay in a baby may mean its loss. The stress of diagnosis must be placed on the persistence of cerebral symptoms, high fever and, what is of greatest import and scarcely appreciated at its full value, Macewen's percussion note over the frontoparietal juncture as a sign of increasing fluid in the head. The younger the child the more difficult it will be to come to a definite conclusion as to increase of fluid in the ventricles, for in rachitic infants a Macewen percussion note is normal, but some practice will teach the difference in the line between the normal and abnormal. A tense fontanelle is of some value, but not always, for some children will mislead the most expert when a crying spell is present.

The mortality in young infants in cerebrospinal meningitis is quite high. In the statistics prepared by Flexner of his serum cases, of 125 infants below one year of age, treated by serum, 63 recovered and 62 died; a gross mortality of 50 per cent. On the other hand, 5 infants injected in the first three days of the disease recovered, and of 16 patients injected in the first week 12 recovered (75 per cent.). In other words, the earlier the injections the more certain the therapeutic effects of the serum. In another statistical report, giving an analysis of 400 cases, there is a mortality of 50 per cent. in 22 patients of 1 year and below, and 42 per cent. between 1 and 2 years of age. Taking these figures as a basis of comparison, in our own service in the Mount Sinai Hospital, there are 15 patients below one year of age with a mortality of 10, or 66 per cent. Of these 15 patients, 2 injected on the fifteenth day recovered, one injected on the seventeenth day improved (discharged), one on the twenty-first day was cured, and one on the twenty-ninth day cured.

* Read before the Clinical Conference in February, 1913, Mount Sinai Hospital.

None of the remaining patients came to us before the second week of the disease and some not before the forty-second day. Not all the patients coming early recovered, for one injected as early as the third day and another on the fourth day of the disease died. Between the ages of 1 and 2 years the mortality was less. Of 12 patients, 6 recovered. Some of the patients who recovered came to us quite late and were injected the twenty-first day or the twenty-ninth day of the disease and recovered, whereas one patient coming to us and receiving the serum on the second day of the disease died after an illness of fourteen days.

There are other causes which can account for the high mortality, among which must certainly be placed the virulence of the infection. Not only are the cerebrum and its fissures most delicately and minutely constructed in these infants, but the infection differs widely in virulence. This has been remarked by Flexner. Another reason is that quite early at the outset in many infants the subarachnoid space at the base of the brain is cut off from that of the cord, with the result that lumbar puncture with introduction of serum becomes fruitless quite early—on the second or third day of the disease in some infants.

A proof that the virulence in various strains of meningococci plays a most important rôle and is not reached by the serum is the fact that it was our fortune in pre-serum days (in spite of a very high mortality in these infants by the methods of treatment then in vogue) occasionally to save a very young infant suffering from meningococcic meningitis by the simple method of repeated lumbar puncture. In an attempt to save the cases in which the subarachnoid space was closed off from the spinal canal and simple lumbar puncture was fruitless, and serum could not be introduced by this route, we have resorted to ventricular puncture, the ventricle being punctured on one or both sides, a certain amount of fluid withdrawn and serum introduced. Eight patients were treated in this manner; some of them had had lumbar puncture and others not. In all of these cases the method was fruitless. In some coming to us on the sixteenth day of the disease, the lumbar puncture being fruitless, no fluid obtained, ventricular puncture was made from the start with no results. This disheartened us as to the future of ventricular puncture. The infants do not seem to bear the procedure well and it seems to me that some improvement over simple ventricular puncture must be devised. Some infants below one year of age cannot recover from the first shock of the infection of meningococci, and lumbar puncture does not relieve them but seems to add to their shock, which becomes more evident when serum is introduced, for they may pass out suddenly or soon after the puncture and serum introduction.

There is a set of cases which cannot be reached by the serum. We have recently had such a case in an infant 10 weeks of age, suffering from purulent meningococcic meningitis, which passed out while the serum was being introduced, the variation in cerebral pressure being too rapid for such a very delicately constructed nervous system. I would therefore urge that, in infants below 2 years of age, in whom meningitis is suspected, an early lumbar puncture be made so that the treatment may be begun as soon as feasible. In these young patients fluids should be withdrawn slowly and with the greatest caution and the serum be introduced very slowly in order that traumatism and extreme changes of pressure be avoided.

SERUM INJECTIONS IN PATIENTS BELOW 2 YEARS OF AGE

Name	Age yrs. mos.	Duration of Illness days	Day of Serum Injection *	Result
1907				
Abe K.	.. 24	30	7	Cured
Hyman B.	.. 15	55	23	Cured
1908				
Herbert L.	.. 3½	38	15 18 20 23 28	Died
Max G.	.. 15	22	8	Cured
Mary R.	.. 24	20	4	Cured
Alice B.	.. 22	25	3 6 10 12 16 19 21 25	Died
1909				
Heiman S.	.. 4	29	13 15	Died
Ethyl W.	.. 4	42	12 14 15 16 17 19 21 25 33 † 35 †	Died
Anna G.	1 ..	26	3 5 6 8 9 11 12 15 18 †	Died
Isaac L.	.. 6	58	15	Died
Frieda G.	1 3	54	16 † 45	Died
1910				
Abraham S.	1 2	35	12	Cured
Leon N.	.. 5½	41	11 13 14 25 † 39	Died
Ida B.	.. 4	119	42 46 71 80 † 87 92	Died
1911				
Celia G.	.. 8	38	21 22 24 34 † 35 35 †	Died
Izzy G.	1 9	36	4 5 10 32	Cured
Hyman K.	.. 7	5	4	Died
Izzie S.	.. 5	33	13	Cured
Sarah S.	1 3	17	11 13 2 inj. 15	Died
Josephine H.	.. 4	32	15	Cured
Oscar L.	.. 5	45	17	Unimpv'd
1912				
Aaron S.	1 9	14½	2	Died
John H.	1 4	31	3 5 8 14 † 22	Died
Louis S.	1 1	22	8 9 10 11 13 † 20	Died
Sidney C.	1 ..	26	7 9	Died
Esther R.	.. 5½	43	21 22 23 29 31	Cured
Millie M.	.. 10	56		Cured

* Serum injected in lumbar region unless otherwise indicated.
† Serum injected in ventricular region.

In young patients the temperature is a guide of great value as to the necessity of repeated puncture and introduction of serum as in older children, but in face of great restlessness and a normal temperature fluid should be withdrawn by lumbar puncture and examined for bacteria. If these persist and a cloudy fluid is obtained, it is safe to reintroduce serum rather than delay and wait for actual cultures to determine whether or not such fluid is sterile. This brings me to a discussion of a baffling feature of this disease in infants and children below 2 years of age. I have mentioned the closure of the foramen of Magendie and the impossibility of performing lumbar puncture in many cases. We then see developed the hopeless picture of posterior basic meningitis. But more baffling are the cases of infants in whom, after repeated injections of serum have been made and the temperature having dropped to the normal and stayed there for weeks, we have developed under our eye the various features of a progressive hydrocephalus. This occurs even when the fluid withdrawn is shown after a time to be sterile. This hydrocephalus is not only due to changes in the ependyma of the ventricles, but, as I have shown and also know, to a persistence of the meningococci in the ventricles in much diminished numbers and of reduced virulence.

I have tried in this summary of our practice in the wards to point out the great difficulties as we meet them in the diagnosis and treatment of these cases and to emphasize the necessity for caution before pronouncing such patients cured. Until some time has elapsed since the onset of normal temperatures, the possibility remains that hydrocephalus may intervene, and I would emphasize the fact that much still remains to be done before we can rest satisfied with our means of aiding these patients.

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PREVENTION OF DISEASE VS. COST OF LIVING *

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It is now pretty generally accepted that the increase in the cost of living must be reckoned with as a necessary consequence of the social, economic, and political development of the world. The problem is made up of so many complex items that little hope need be expected that a reduction in the cost of the several factors is likely or possible. Neither is there much promise of success in a fight to reduce the total cost of these various component elements. The situation is quite analogous to that which has developed in preventive medicine. Here we have found that germs of disease and microbes are so numerous and are so ubiquitous that their complete eradication is impossible. Some of them are helpful to health; others are powerful allies in combating certain diseases if rightly marshaled. The successful campaign against the harmful germs has been so to raise the inherent fighting power of each human being that the attacks from germs cannot get by the person's defense, that is, by his asset of health, or health income. Each person has within himself this resistant power to disease. Modern medicine consists greatly in bringing it into action. In the fight against tuberculosis alone, it has resulted in a reduction of deaths, in Massachusetts, of 45 per cent. since 1880. If the same principle is applied widely and in accordance with established facts in medicine, so that individuals are enabled to develop a greater working power, both in quality and in quantity, the increase of each one's wage income would exceed, or at least keep pace with rising prices. This would defeat the most powerful factor making for discontent, discouragement, and failure in the battle for life to-day. It would substitute for inefficient and unsatisfactory existence a happy, healthy, better living with which to meet the problems of high cost of living and present-day discontent.

There are two facts, however, which must be stated plainly to avoid misunderstanding. The first is the absence of a fixed normal standard of living for all classes of society; the second is that one hygienic advantage may be bought by a hygienic sacrifice in another direction. As an example of the latter, we find that people living under conditions which suggest unhygienic modes of life are often remarkably free from disease, and their children survive attacks of those infant diseases so fatal to a large number of babies each year. These people spend much time out of doors in the sunshine and fresh air. They are less dependent than others on housing conditions; consequently they can spend a greater proportion of the annual income on food, etc. This fact is often overlooked in dealing statistically with the cost of living, especially with the problem of housing conditions.

Stated briefly, a normal standard of living may be defined as that which permits each individual to live as an efficient, healthy human being—morally, mentally and physically. This definition simplifies greatly the whole problem of the cost of living and reduces it to a consideration principally of two factors—health and efficiency. All economists to-day agree that the greatest asset of any country is the vital efficiency of its citizens. Moralists and physicians agree that this factor has a direct relationship to morals and to mental efficiency. Furthermore, both assert that the conservation of the physical efficiency aids greatly in conserving the moral and the mental standard of society.

It is my purpose to point out some of the methods which modern medicine offers as a means to promote health and, so far as efficiency is dependent on health, to promote efficiency.

It is unnecessary to relate here the marvelous development of knowledge in all branches of science during the past century. The century has been justly termed the renaissance of science. In this medicine has profited greatly. The empiricism of former years has given place to facts based on careful clinical observations and on well-tested laboratory findings. This expansion and deepening of science has fortunately developed in medicine a higher reverence for and open acknowledgment of the spiritual and the humane. This has given to modern medicine a genuine altruism. The application of these various facts constitutes preventive medicine.

The more clearly one sees the whole field of preventive medicine, the stronger the conviction that all the problems are social problems and that they must be solved by social remedies. This is at once evident when we recognize, first, that the responsibility for the conditions that cause these diseases lies with the people and, secondly, that all the power and authority for bettering conditions also rest with society and its agents. It is a popular belief that the control and the prevention of disease are

* Address given under the auspices of Council on Health and Public Instruction of the American Medical Association before the Women's Municipal League, Boston.

largely a duty of the medical profession. This is not true. The medical profession can and does furnish the technical information as to how disease can be abolished or at least reduced. The physicians can point out the way, but they cannot, of themselves, accomplish anything permanent without public support. This support, this cooperation can come best when the public understands what is needed and why it is necessary. Public education, therefore, becomes an indispensable and a necessary factor in every movement for conserving health.

It adds to rather than detracts from the gifts of Jenner, Pasteur, Koch, Behring and others to assert that their discoveries in medical science were comparatively of small value to humanity until the public was educated in the value and the significance of these wonderful achievements. To-day the results are manifest in the reduction of some diseases almost to nothing, as yellow fever and small-pox; in robbing epidemics, as diphtheria, plague and cholera, of their terrors; in lessening the sufferings and the economic loss in quarantine; and, finally, in developing a happier, healthier, longer-lived community the world over. Each day the force and the wisdom of Pasteur's declaration that no human being need die of a parasitic disease is more appreciated, especially as the public comes to realize the enormous unnecessary waste of health, efficiency, and life itself yet prevailing and due greatly to causes which are preventable.

Some one has lately very appropriately placed preventable ignorance in the same list with the three other great preventable and unnecessary wastes, namely, preventable deaths, preventable sickness and preventable conditions of low physical and mental efficiency.

In reporting on the cost of living, the Massachusetts commission had this to say on this point:

> **The increased vital efficiency of the citizens of this state which would result from a conservation of the present waste of health would, if expended in labor, increase the earnings of those whose health is impaired and also lessen the burdens of those who are at present unnecessarily ill. This increase in earnings would thus tend to reduce the cost of living, increase the total earnings of the citizens, and make the average income larger.**

The commission asserts positively that there is no direct relation between the waste of health and the recent rise in prices; and furthermore, that there is no evidence that the waste of health lowered the rate of wages. It is very evident, however, that sickness, if long continued or often repeated, lowers the efficiency of the individual, and this lowered efficiency means, sooner or later, a reduced income, often a new and less permanent job. Conservation of health, therefore, means higher wages and this enables the workers to keep ahead of the increasing price of the commodities of life.

The extent to which health may be conserved and the number of accidents and deaths that can be prevented to-day seems incredible. The testimony of all those who are competent to judge agrees that on a very conservative estimate, 42.3 per cent. of the deaths each year might be postponed; that at least 50 per cent. of the cases of serious illness are preventable; that the average human life is capable of being prolonged 12.3 years; that 4 per cent. of the population of Massachusetts are on the sick list all the time, with an average loss, to each individual in the state, of the equivalent of two weeks' wages each year. Stated in dollars and cents, this means that families and the state suffer an annual loss of fifty million dollars because of preventable deaths and preventable serious illness—a per capita loss, each year, of fifteen dollars. This startling unnecessary waste does not include the economic loss of the 12.3 years that are sacrificed to indifference, ignorance, and neglect in applying the lessons which preventive medicine makes possible.

These great unnecessary wastes of human life and efficiency, affecting the cost of living and which are greatly preventable, may be grouped as follows: (1) preventable accidents; (2) preventable illnesses, and (3) preventable deaths.

Under the head of preventable accidents we are rapidly accumulating a mass of testimony the application of which to preventive measures should reduce greatly the risk and hazard of industrial life. Occupations are now being classified on a basis of relative risk to the workers. While it is true that many occupations will always carry with them unavoidable risks, nevertheless it can be claimed, without fear of successful contradiction, that there is not one of these occupations in which the hazard and risk of accident cannot be reduced to a minimum. The reports of the committee of the National Association of Manufacturers and the Interstate Commerce Commission show that in this country there were 500,000 workers incapacitated or killed by accidents incidental to industrial life in one year. The fact that 11,800 persons, employees and others, were killed, and 111,000 maimed on our railroads is in striking contrast with the reports from the industries of Germany, where the established facts of preventive medicine are applied. Since July 1, 1912, there has been in operation in this state a Workmen's Compensation Act. In six months over 52,000 accidents have been reported. The provisions of this act and the exceptionally high personnel of the commission justify a most optimistic view with regard to future prevention of the great loss of health, limb and life. It has been the experience in Germany—and in states in this country—that the adoption of this line of insurance has led to the installation of safety devices by employers which have reduced greatly the number of accidents. In the meantime, much progress can be made by instruction in the prevention and the avoidance of dangers incidental to industrial life. This is very necessary to-day insomuch as the trend of public education is toward greater emphasis on vocational training. Children now being guided into the various lines of vocational life should be given a word of warning or caution on its possible dangers. Laws may compel the employers to protect the employee from exposed machinery, from dangerous fumes or irritating dusts but no law can compel operators in rubber factories, for instance, to wash their hands, or prevent operatives at this work from eating and drinking in the work-room. Neither can laws adequately protect the employee from accident from electricity when this element is a necessary and often unavoidable source of danger. Instruction in prevention is here more important than labor laws for either protection or compensation.

Undoubtedly the three great factors besides ignorance which promote industrial accidents are defective hearing, defective sight and fatigue. Many failures, both in health and in efficiency, are due to poor sight or hearing. Persons with either defect are as clearly out of place at many lines of industrial life as a color-blind person would be as engineer, pilot or color-mixer. Many occupations increase these defects. Accidents must result sooner or later.

One of the immediate results of the application and future extension of the Employers' Insurance and Workmen's Compensation Act must necessarily be that great

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attention will be directed to those physical defects which tend to increase industrial accidents, especially defects of vision and hearing, a large majority of which defects are remedial and curable.

The influence of the factor of fatigue in causing industrial accidents has not received the attention it deserves. The amount of unnecessary fatigue among all classes is not appreciated. Professor Fisher states that 5 per cent. of all persons in this country are fatigued to a degree sufficient to totally impair their working powers. Every physician—conversant with industrial life in our great manufacturing centers—recognizes the constantly recurring accidents which occur daily in the mills and workshops. These accidents occur with a clock-like regularity at certain hours of the day, a time of the day when the fatigue factor is most active. This fact has been carefully worked out in the German insurance tables and is as follows:

Time.	Accident Per Cent.	Time.	Accident Per Cent.
6- 7 a. m.	2.82	12- 1 p. m.	3.81
7- 8 a. m.	5.16	1- 2 p. m.	4.84
8- 9 a. m.	5.29	2- 3 p. m.	6.73
9-10 a. m.	6.04	3- 4 p. m.	8.07
10-11 a. m.	10.37	4- 5 p. m.	7.65
11-12 a. m.	10.31	5- 6 p. m.	8.48

From a very intimate knowledge of industrial life in the largest manufacturing city of this state, I have no hesitation in designating fatigue as one of the great factors in accidents of factory life. Fatigue has also a direct bearing on the susceptibility of the individual to disease. It lowers the whole tone of the nervous and muscular systems. It is a great evil not yet sufficiently recognized as a factor in undermining health and efficiency. It can be prevented almost wholly. Fresh air, good ventilation, avoidance of overheated workshops, enforced periods of rest interspersed in daily life, especially at midday, outdoor exercise at noon rather than confinement in vitiated room atmosphere, a more rigid inspection of industrial and mercantile conditions of employment, a strict enforcement of laws relative to hours of labor, especially those relating to women and children, and a proper regard for sanitary and toilet accommodations will reduce almost to zero the evil possibilities arising from fatigue. The simple exercises of physical training—now taught in the schools—should be given such a definite meaning to the pupils that each child carries into industrial life an appreciation of the value of these simple means to promote better circulation and respiration.

PREVENTABLE ILLNESS: (A) OCCUPATIONAL DISEASES

Besides the accidents incidental to many occupations, certain diseases have become so closely associated with certain lines of industries that they are known as occupational diseases. Some of these industries have been designated as "dangerous trades," and the State Board of Health in this state is enjoined by the legislature to safeguard in a special manner the health of employees at these trades. Minors under 18 years of age are prohibited from entering certain specified trades of this group. Already the board of health has designated some twenty-six of these as dangerous trades, into which minors must not be permitted to enter. The list includes many trades which the educational authorities in several states are incorporating to-day into their programs for vocational training, as well as for industrial and trade-school work. Educational authorities have a great responsibility added to their strictly pedagogic functions by reason of this fact. A knowledge of these dangers should form a part of the preparation of those who are to undertake the teaching of trades in the public schools. Preventive medicine has pointed out ways and means which, if employed, will reduce to a minimum many of the dangers arising from these trades. It has designated certain family and individual traits which predispose to the development of definite diseases if the person is subjected to employment at specified trades or vocations. The disregard of this "tendency to diseases" explains the occurrence of many physical breakdowns in industrial life.

There are other trades in the pursuit of which physical incapacity is almost unavoidable. Examples of this group include woodcarving, lithography, typesetting, as well as the work of copperplate engravers, designers, photographic retouchers, goldsmiths, diamond-cutters, jewelers and needlewomen, especially those who work at embroidery. Obviously none with defective eyesight should enter these trades. In certain other trades, such as electric iron-welding, glass-blowing, etc., the dazzling rays of excessive light promote the formation of cataract. In trades in which lead, arsenic, phosphorus, methyl alcohol, nicotin, nitrobenzol, etc., are used, the occurrence of skin affections, eye affections, neuritis, paralysis, bone diseases, kidney diseases and blood diseases is so constant that no one to-day questions the cause. Preventive medicine has been able to reduce these dangers greatly, principally by adequate ventilation and light, and by instruction. It would take us too far to enter into the various manifestations of occupational diseases. Sufficient has been given, however, to warrant the suggestion that preventive medicine must form a part, and not an inconsiderable part, in any plan of industrial education or vocational training if the workers are to acquire and retain their best efficiency and health.

PREVENTABLE ILLNESS: (B) GENERAL DISEASES

It has already been pointed out that fully 50 per cent. of illness is preventable. It is no exaggeration to state that if all easily preventable physical troubles were prevented, the addition which would be made thereby to the energy and happiness of the people is beyond description. This item is an additional gain in the family budget—the usual index of the cost of living. Not only has preventive medicine pointed out what diseases are preventable and how to prevent them but also it has clearly grouped disease, both as to individual and to class, so that predisposition and immunity each have a vital value. The money value of preventable illness in Massachusetts is, including loss of wages and cost of medical attendance, $14,896,912 each year. This great loss occurs in the wage-earning period of life. It is the one factor often in the cost of living which, if transferred to the asset or credit column of the family, would mean an individual or family added to the class of producers with efficiency and one less in the group of dependents with inefficiency. The results achieved in the fight against tuberculosis are not unique in preventive medicine. Reduction in the morbidity, as well as in the mortality, of other diseases is equally striking and encouraging. The value of the lessons of the antituberculosis crusade lies greatly in the fact that the public is now convinced that the once dreaded foes to humanity no longer possess the terror of former times; furthermore, that it is possible to win a victory over inheritance, environment, disease and even death by the observance of the simplest teachings of preventive medicine, especially those on cleanliness, exer-

cise and diet; also that the effective remedies often are solely Nature's gifts—fresh air, sunshine and rest. It is becoming more evident each day that the weapons so effective against tuberculosis are equally effective in combating many other infectious diseases, as well as in eradicating those nervous and functional disturbances which are productive of ill health. While it is unquestionably true that enhanced prices of food have affected injuriously the health of many in the community, nevertheless it is far more evident that the real cause is often an unwise expenditure of the income for articles of food and, more evident still, an improper preparation of food rather than a question of quantity or quality of food or size of income even.

Educational authorities have grasped this fact and to-day great emphasis is being laid on this form of instruction to those who in a few years will be the housewives of the community. This brings the problem of prevention of disease and the cost of living back to the schoolroom. Here lies the greatest opportunity for teaching the value of health and efficiency rather than trying later in life to reduce the cost of neglect of this instruction. The two terms "value" and "cost" are not synonyms.

A good illustration of this fact is the prevalence of heart-disease. It outranks tuberculosis, pneumonia and infant mortality as a cause of death in Massachusetts. It has no equal as a cause of impaired efficiency. It is alarmingly common among schoolchildren. All physicians agree that there is a great difference between a cardiac lesion and a diseased heart. No matter what the anatomic change present may be, that heart is not a diseased heart so long as it can adequately take care of the demands placed on it by the individual. Although this is all true, nevertheless the great value of treatment in heart-affections is that of prophylaxis or prevention, rather than therapeutic or cure. This latter is the cost of negligence in applying prevention. So long as the cardiac lesion can be prevented from becoming an inadequate or incompetent heart, all goes well no matter how serious or of what form the changes in the valves or heart-muscles may be. The enormously high death-rate from heart-disease to-day and the great frequency with which children at the school age exhibit genuine heart-diseases, often beyond a possible stage of competency adequate for the simplest vocations of life, make this problem one of the most important in political economy.

Eliminating the heart diseases of those congenitally defective, who seldom reach the wage-earning period, it can be claimed that fully 80 per cent. of heart-disease could be prevented if the initial lesion and the exciting cause of the lesion were treated with half the care that is now given to the same stage of incipient tuberculosis. Preventive medicine teaches that rheumatism (often called growing pains), tonsillitis, chorea (St. Vitus' dance), diphtheria, scarlet fever as well as the various infectious diseases, cause a large percentage of heart-disease each. Some of these heart-affections are unavoidable. Many, however, are preventable if anticipated early.

Special hospitals for the training of children and adults afflicted with heart-disease offer the greatest promise of so molding lives that each person by a wise choice of occupation and mode of life may be able to live efficiently within his cardiac power. The cost of failure to learn the value of this lesson is inevitable—irregular employment, repeated illness, changing occupations, broken compensation of the heart and, finally, complete permanent dependency.

Next in importance to heart-disease prevention is the problem of prevention of diseases of infancy and of childhood. The necessity, as well as the importance, of beginning this prevention early in life is shown by the single fact that one-third of all cases of blindness can be referred to infection and neglect at the time of birth. These sightless babies soon become a burden on the family and subtract much from the possible income by the home care required from wage-earning mothers. Much infection of eyes, nose, mouth, etc., of the newborn can be avoided by the observance of the simple rule in preventive medicine—cleanliness.

Infant morbidity and infant mortality as recorded to-day are a gross injustice to God and to mankind, neither excusable nor pardonable. It is little short of criminal negligence that permits them to exist. That they represent the greatest loss to mankind to-day is the verdict of all economists. To state that one-fifth of all deaths that occur each year are those of infants less than one year of age, and that one-fourth of all deaths are those of children less than five years of age, while appalling, does not half state the situation. Our present knowledge of sanitary measures guarantees readily that 47 per cent. of those who die during the first year of life could be saved, and that 67 per cent. of the diseases that kill in the first five years of life are preventable. Notwithstanding this possible prevention, more than 200,000 of these young lives are sacrificed each year in this country at the rate of one life each ten seconds of time. Nothing so contradicts our boasted civilization and our claim of modern advance in medical science as this yearly unnecessary waste of infant life. At times it would seem, from the apparent indifference shown in the matter, as if the public yet believed that this high rate of mortality among children at or soon after birth was a wise dispensation of Nature to eliminate the unfit. In a study of this problem, it becomes evident that almost one-third of these deaths, especially of children under one year of age, can be ascribed to diseases of the digestive system. These diseases, together with those of the respiratory system and congenital debility, carry off 70 per cent. of all babies who die in the first year of life. This reduces the problem of prevention to simply giving to the baby its natural birthright, namely, the right to be born healthy, and secondly, pure milk and pure air or, as it is more generally stated, proper feeding.

The noble, patriotic, unselfish warfare that this association has waged for a purer and better milk-supply in our city has won the admiration of all who put a value on human life above that of commercial interests. No physician questions the benefit of this factor in reducing infant illnesses and deaths in many cases in which this form of artificial feeding has, through necessity, been adopted. The problem that I would present, however, is not so much that of the quality of cow's milk as an article of food, but whether it should be advocated as an adequate or preferred substitute for natural breast-feeding. I do not think it is. Undoubtedly, the high cost of living has forced many women to seek employment outside the home in order to help out the family income, and a large sacrifice of life, prenatal as well as infant, has resulted. Many infants, even when born healthy, are sacrificed by either the inability or the unwillingness of mothers to nurse their offspring. The question of infant morbidity and infant mortality is not one of sanitation alone, or of housing, or of poverty as

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such, but is mainly a question of motherhood. The problem will be solved only when the value of intelligent motherhood is placed above that of philanthropy, of hospitals, of the medical profession and of the state. Neglect and ignorance are, therefore, more important than poverty as causative factors in the cause of infant illness and deaths. We have two striking illustrations bearing directly on this point.

During the siege of Paris (1870-71) the women were compelled to nurse their own babies on account of the absence of cow's milk. Infant mortality under one year fell from 33 to 7 per cent.

During the cotton famine of 1860 women were not at work in the mills. They nursed their babies and one-half of the infant mortality disappeared.

From 80 to 90 per cent. of all deaths from gastro-intestinal disease among infants takes place in the artificially fed, or ten bottle-fed babies die to one which is breast-fed. In institutions it has been found that the death rate is frequently from 90 to 100 per cent. when babies are separated from their mothers. After a trial of fifteen years, by which over 7,000 mothers with their babies were placed out in domestic service, the New York society was able to report that four-fifths of the babies lived and were in good condition; one-fifth died or were in poor condition.

The subject of infant-feeding, therefore, is not to be treated as an ethical question alone, but must be considered as a problem of preventive medicine of far-reaching results. It is an undisputed fact of preventive medicine that certain vital tendencies, which make for the preservation of the infant, such as immunity against certain infectious diseases, are transmitted through the mother's milk to her child. Neither a wet-nurse's breast-milk nor a cow's milk can do this for a child.

The dangers connected with cow's milk as an infant food are principally these—the chemical, the bacteriologic and the quantitative. Even with these three elements reduced to their lowest danger-point, there yet remains such a difference between cow's milk and human milk that the former can never be considered a safe substitute for the latter. This does not mean that we should relax one bit our efforts for pure cow's milk, which is in itself as near a perfect food chemically as any article of food we possess. Its value as an article of food must not be confounded with its relative value as a food for infants in place of maternal nursing, or even of wet-nursing of infants. One has to recall but a few of the essential differences between human milk and cow's milk to see the force of these statements. Notwithstanding all the successes in lessening the dangers from cow's milk, and with a full knowledge of the results achieved in feeding by modified milk preparations, I have no hesitation in advocating breast-feeding even under surroundings which appear to be unfavorable. The great prevalence of digestive disturbances, leading invariably to impaired vitality, often of a permanent degree, and the high rate of mortality among artificially fed babies, in spite of the great progress made in the art of artificial infant-feeding during the last decade, rob the foregoing statement of all appearances of an exaggeration of the problem.

There are unfortunately a large class of women who cannot nurse their infants, but medical experience the world over fails to substantiate the popular belief that failure to nurse the children is due to weakness in the mothers. The decrease in the proportion of breast-fed children is due, first, to more frequent occupation to-day of wife and mother outside the home; second, to the exaggerated claims of artificial food manufacturers, and the popular delusion that their adaptation to the physiologic needs of each infant is so simple that the process can be safely entrusted to "little mothers" who, after one or two lessons, can accomplish what the highest trained clinicians, working under ideal conditions of cleanliness and sanitation, fail to attain. Modern dress and modern social life have combined as factors in reducing the proportion of breast-fed infants. Whether these factors will collect their toll on the next generation of daughters remains to be seen. A recent investigation showed that only two daughters, out of 480 born to mothers who could not nurse their children, were themselves able to nurse.

The much-heralded influence of poverty, overcrowding and poor housing conditions as factors in infant mortality does not accord with facts. Whatever influence any one of these conditions might possess is greatly minimized by the favorable effects of breast-feeding and, as pointed out in the beginning, by the purchase, so to speak, of our hygienic advantage by a hygienic sacrifice in another direction. The truth of this is evident from a study of our own local situation. Boston has the lowest death-rate of infants under one year of age of any city in the country. Ward 8 has 190 persons to the acre, the most thickly settled part of Boston; yet it is next to the best ward, so far as infant mortality goes, and only fourth in the total mortality of the city. Ward 10, the sixth most congested district in the city, has the lowest general mortality as well as the lowest infant mortality in the city. The highest total mortality occurs in Ward 7, which has only 38 persons to the acre. Ward 5, with a density of 62, and Ward 13, with a density of 35, stand quite high in the rate of mortality each year. These same general results can be quoted from many cities of foreign countries. The conclusions from the study of the problem in the most insanitary districts of Italy are that the low infant mortality prevailing in many of these districts is due to the custom of breast-feeding followed by the poor people. In many cities of Germany and Austria the law requires the death certificates of infants shall contain a statement of the kind of food given to the infant either shortly before its death or throughout its life. There is no legitimate reason why the use of artificial foods and of so-called milk substitutes for infant-feeding should not be controlled by law and their use limited to the prescription of a physician. Such a law would reduce greatly infant morbidity and infant mortality.

I have dwelt at some length on the problem of infant morbidity and mortality because it is one of the greatest preventable wastes of life to-day, and one that weighs most heavily on the family budget. It resolves itself chiefly into a question of proper feeding. This is best guaranteed by intelligent motherhood, which can alone give to the infant that which neither wealth nor state nor yet science can offer with equal benefit to mother and child.

Many lessons of the value of preventive medicine in solving the complex problems of the cost of living might be presented in addition to those given in this address. I have selected the more prominent and the more evident of the group. There are others equally important.

The fact to remember is that the whole problem is a social one. Increased cost of living is not likely to be lessened or altered by laws or mode of life. Such remedies are largely academic. Preventive medicine does offer a cure for the condition in part at least if not in its entirety. It shows how the enormous waste of health,

energy, money and life may be curtailed and greatly prevented. It guarantees to each person who will learn its lessons and who will apply even its simplest teachings an assurance of greater power, greater health, greater wage-earning ability. This means a nearer approach to the normal living standard of each individual—an efficient, healthy mode of life—physically, mentally and morally.

310 Commonwealth Avenue.

WOOD-ALCOHOL BLINDNESS

REPORT OF TWO CASES, ONE OF EXTERNAL AND ONE OF INTERNAL USE *

HIRAM WOODS, M.D.
BALTIMORE

My object in reporting these cases of wood-alcohol blindness is to arouse, if possible, enough sentiment in the medical profession to influence the legislature to pass an act safeguarding innocent persons against an insidious poison. In 1897 Dr. Archibald G. Thompson[1] of Philadelphia reported a case of sudden blindness due to drinking "Jamaica ginger." A year later four such cases came under my observation, while two others were furnished me by my friends Drs. Herbert Harlan and Francis M. Chisolm. I reported these six cases[2] in 1899. All the patients presented substantially the same symptoms. They had drunk what they supposed to be Jamaica ginger. Shortly afterward, within from twelve to twenty-four hours, they were seized with nausea, headache, prostration and coma. These were attributed to a "drunk." On awaking they found themselves blind, or with central vision lost; all of them went through various periods of transient and temporary improvement, finally settling down into either total blindness or loss of central vision.

Both Thompson and I were totally at a loss to account for the toxic agent. The eye lesion in all cases was nerve atrophy. In searching literature I found a case reported by Mengin[3] presenting similar symptoms, attributed to wood alcohol. The date of this case was 1879. It was mentioned in my paper.[2] I obtained from one or more of the victims the name of the maker of the Jamaica ginger and asked for the formula; alcohol was one of the ingredients, but the kind of alcohol was not specified. I asked whether it was wood or grain alcohol, and the reply was "grain." This statement was accepted as true. Subsequently specimens of Jamaica ginger made by this firm were obtained and submitted to chemical analysis. Wood alcohol was found, and its use confessed later under oath when the cases became the basis of suits. These were finally compromised on payment of damages.

For some years thereafter blindness from wood alcohol was reported from various parts of the country and from different preparations, soft drinks, etc. In 1904 the late Dr. Frank Buller of Montreal and Dr. Casey A. Wood[4] of Chicago collected reports of all the cases to date. While many instances doubtless escaped them, they found 275 instances of death or blindness traceable to wood alcohol. Since then the literature has been comparatively free from such reports. Lately, however, they have reappeared. An admirable and instructive article on the subject was published recently by Dr. Wood.[5]

A word now with reference to wood alcohol itself. It is very much cheaper than grain alcohol. Dr. Wood gives the average comparative price as 50 cents per gallon for the one and $2.40 for the other. Until chemical methods succeeded in refining wood alcohol so as to remove its unpleasant odor and taste, it could not be used internally. Unfortunately, some skilful chemist discovered that the obnoxious factors could be removed. At present, under the name of Columbian Spirits, Standard Wood Spirits, etc., a deodorized and apparently not bad-tasting preparation of wood alcohol is on the market. The Standard Wood Spirits preparation is labeled "For Bathing, Burning and Cleaning." Its chief sale is in Canada, according to Dr. Wood's paper. Columbian Spirits is, I believe, made extensively in the United States. The difference in price is a big inducement to manufacturers to employ wood alcohol.

An interesting and singular feature is the great difference in the susceptibility of individuals to the influence of wood alcohol. As small a quantity as a teaspoonful has been known to produce serious consequences, while other persons have consumed large quantities with impunity. One of the interesting sideshows in the Baltimore suits was the spectacle of one of the defendants sitting on the witness stand and demonstrating the innocence of Columbian Spirits by taking copious drinks from time to time. As Dr. Wood states, the exact way in which wood alcohol destroys or cripples the central nervous system is not well understood. It is known, however, that it is not easily eliminated, as is the case with ethyl alcohol. It is believed that formaldehyd is one of its by-products. It has a peculiar cumulative effect, small and repeated doses, while not causing intoxication, often leading to serious results on the nervous system. As stated, the cause of blindness is atrophy of the optic nerve, with probable destruction of the ganglion retinal cells. In Dr. Wood's recent paper he quotes from the report by Dr. Buller and himself some fourteen conclusions. The following are some of them:

1. Methyl, or wood alcohol, in any of its forms, and all methylated preparations as well, are dangerous poisons, menacing both life and sight.

2. It is used as an adulterant of, and substitute for, grain alcohol in cheap whisky and other alcoholic beverages, not to mention Jamaica ginger, lemon extract and many other essences and flavoring fluids.

3. Methyl alcohol is largely used in the preparation of many proprietary and patent medicines, witch hazel, domestic liniments, as well as bay rum, cologne water, Florida water and other perfumes.

5. The symptoms of acute poisoning are gastro-intestinal disturbances, more or less severe, accompanied by abdominal pain, general weakness, nausea, vomiting, vertigo, headache, dilated pupils and blindness. If recovery does not occur, there is marked depression of the heart's action, sighing respiration, cold sweats, delirium, unconsciousness, coma and death.

7. The diagnosis can hardly be mistaken. Methyl alcohol poisoning presents a picture unlike that of any other intoxication. Acute abdominal distress, followed by blindness, should always awake suspicion of methyl alcohol poisoning.

8. The prevention of poisoning by this insidious drug can only be brought about by prohibiting (or rendering unprofitable) the sale of deodorized wood alcohol in all its forms. The

* Read at the annual meeting of The Medical and Chirurgical Faculty of Maryland, April 23, 1913.

1. Thompson, Archibald G.: Ophth. Rec., November, 1897.
2. Woods, Hiram: Ophth. Rec., February, 1899.
3. Mengin, cited by Knies: The Eye in General Diseases, p. 347.
4. Wood, Casey A., and Buller, Frank: Poisoning by Wood Alcohol. Cases of Death and Blindness from Columbian Spirits and Other Methylated Preparations, THE JOURNAL A. M. A., Oct. 1, S. 15, 22 and 29, 1904, pp. 972, 1058, 1117, 1213 and 1289.
5. Wood, Casey A.: Death and Blindness from Methyl or Wood-Alcohol Poisoning, with Means of Prevention, THE JOURNAL A. M. A., Nov. 30, 1912, p. 1962. See also Methyl Alcohol as a Poison, editorial, THE JOURNAL A. M. A., Nov. 30, 1912, p. 1974.

number of deaths may, meantime, be limited by putting all methylated preparations on the list of poisons and prosecuting all persons adulterating foods and drinks with it. Labeling it with the notice, "This fluid, taken internally, is likely to produce blindness," will certainly have a deterrent effect.

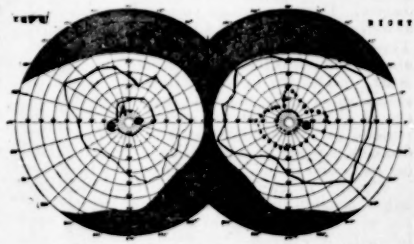
10. Poisoning by inhalation of the fumes of methyl alcohol generally occurs when the exhalations are mixed with rebreathed air, as in varnishing the interior of beer-vats, closets or small rooms, etc. It is also highly probable that in susceptible subjects repeated or even single methylated "alcohol rubs" may produce poisoning symptoms, through absorption of the spirit by the skin.

REPORT OF CASES

Reports of my two recent cases follow:

CASE 1.—Blindness from external application of some refined preparation of wood alcohol. W. H., aged 42, consulted me, Jan. 8, 1913, for sudden loss of vision. He gave the following history: For some years he has been a moderate drinker. He has been employed as general utility man in a large candy factory in Baltimore. There is used in this factory, according to his statement, a preparation called "spirits" for making shellac, with which to "varnish" certain kinds of candy. The patient suffered from what he supposed to be rheumatism, chiefly affecting the calves of the legs and hips. For a month or more prior to his loss of sight he had been using this "spirits" for rubbing the painful muscles. These applications were made usually twice, and sometimes three times a day. On the morning of January 6, after the usual rubbing, he had started for the factory. After working an hour or so, his sight became dim, he felt nauseated and decided to go home, a distance of probably 2 miles through the city. He walked to his house, which he barely recognized when reached. Within an hour he was totally blind. I saw him two days later. The pupils were widely dilated and inactive to light. Light perception was lost. Ophthalmoscopic appearances were negative. During the month or six weeks he was under observation, he occasionally regained a little vision. Once or twice he saw well enough to reach for my hand placed in different positions before his eyes. This vision seemed to be limited to some part of the nasal fundus, judging from the way he moved his head in order to see. This improvement was only transient and he relapsed to the condition first observed—total blindness. Both nerve heads are now atrophic with narrowed vessels. The patient's wife brought me a bottle of the "spirits" which her husband had used. Analysis, kindly made for me by Mr. Dunning, of Messrs. Hynson, Westcott & Co., proved this to be one of the refined preparations of wood alcohol. As the man was a moderate drinker of cheap whisky it was of course necessary to eliminate so far as possible the presence of wood alcohol in the alleged whisky sold at the bars where he drank. A list of five or six of these saloons was furnished me and I sent it to Dr. Fulton, of the State Board of Health. In turn he and Dr. Caspari sent their agents and purchased from these saloons their five-cent whisky. Analysis showed that none of these specimens contained wood alcohol. This is the only instance of blindness caused by external application of wood alcohol which has come to my notice. There is a factor of doubt because the man may have obtained whisky at saloons other than those mentioned to me; but he insisted that this was not the case, and that he never drank any of the "spirits" which he used for rubbing. Possibly inhalation may have had something to do with producing blindness; still, all the cases of inhalation blindness with which I am familiar have occurred in persons working in closed places, such as vats, vaults, etc., where rebreathed air necessarily becomes charged with the wood-alcohol fumes.

CASE 2.—Partial blindness, which will probably become complete, from drinking supposed and mislabeled "whisky" containing wood alcohol. February 4, 1913, H. E., aged between 20 and 30, was brought to me with the following history: January 24 he and some friends bought at a saloon in Baltimore several pint bottles of what was thought to be whisky. At any rate, according to the patient's statement, a special brand of whisky was asked for, and both the package containing the bottle and the bottle itself were so labeled. It was impossible to tell how much of the stuff was drunk. He worked on the 25th in the button factory where he was employed, and on the 26th was taken ill with headache, nausea, cramps, etc. The next day his sight was lost. He seems to have remained blind during the week before I saw him, occasionally having some vision, and then losing it entirely. When he was brought to the hospital by his employer he was totally blind. Both nerves were already showing evidence of atrophy. The only other lesion in either eye was a very minute left vitreous opacity well forward. There was not the least evidence of either recent or old trouble of any other kind, and the patient was sure that prior to this spree he had never had trouble with sight. The symptoms pointing clearly to wood alcohol, I tried to obtain remnants of the liquor used. There was none obtainable. Then the man's employer sent another employee to the saloon where he asked for a pint of this brand of whisky. The liquor was brought to me in its package, which was labeled with the name of the brand. I delivered it in the same condition to Mr. Dunning, who found about 30 per cent. of wood alcohol. Later other specimens were purchased at this saloon by various persons connected with the man's employer, Mr. Dunning or the State Board of Health, and all of them, with, I understand, one exception, contained from 25 to 30 per cent. of wood alcohol. All were bought under the name of this



Fields of vision, Case 2. Left eye: Outer line is white field. Blue and red were seen poorly, approximately 10 degrees within white line. Space A, total color scotoma, white; very faint. Dark spot in nasal field, absolute positive scotoma. Right eye: Outer line indicates the remarkably good white field, in view of total blindness when first observed. Intermediate line of hollow dots is red field. Inner broken line includes space of doubtful red perception, March 21, and color scotoma, April 3. Blue perception was nowhere definite enough to record.

brand of whisky and all were so labeled. The legal side of this case is now in the hands of the state's attorney.

The further history presents some interesting features. Wood alcohol, when it produces defective vision, causes either total loss of sight or central scotoma. As a rule, according to my observation, the prognosis in any case can usually be estimated if we see the patient at his worst; or, to put it in another way, the ultimate result is seldom better than the poorest vision observed at any given time. Until this degree of blindness has become fixed, there may be, for an unlimited period, variations in vision. This man was entirely blind when I first saw him. His pupils were inactive to light and dilated. Consequently I expect the ultimate result to be total blindness. At the same time there has been an apparent improvement, and it is to be hoped that some vision will remain. March 21 the right eye had one-fifth central vision, with fairly good field for white. Perception for blue was indeterminable. Red was seen peripherally, though in a narrowed field, while at the fovea, and for 10 degrees beyond, its perception was doubtful. The meaning of these color losses is that the retinal cells are partially, though as yet not entirely, destroyed, and that the optic nerves, certainly

the central fibers, are undergoing atrophy. Two weeks later the right eye showed complete loss for red at and around the fovea, this central blind spot reaching at one point the peripheral red vision. At the same time central vision had become reduced to one tenth, a loss of one half since March 21. The peripheral limitations for white were unchanged. It looks as though a central scotoma is inevitable, as the best possible outcome, and I fear the atrophy will not stop there. The left eye, March 21, counted fingers doubtfully at 2 feet by eccentric fixation. At the nasal edge of the fovea there was an absolute scotoma, with a perifoveal area of very doubtful white perception. Colors were not seen at all in this area of doubtful white perception, while both red and blue were seen in a contracted field in the periphery. The field figures are appended. As to treatment, syphilis and tuberculosis were eliminated, the first by a Wassermann test, the second by careful clinical examination. There was no reason whatever to suspect either. The man was kept in the hospital and treated by diaphoresis, and later strychnin. At the very best the ultimate result will be complete scotoma from the center to the limits of doubtful white perception, while there is reason to fear that this scotoma will eventually break through to the narrowed white field. This will mean total blindness.

PREVENTIVE MEASURES WHICH OUGHT TO BE TAKEN

Preventive medicine makes it incumbent on the profession to prevent disease if possible. What can be done in view of this apparent revival of the wood-alcohol danger? There is no single purpose for which wood alcohol is used that is not filled by something safer. These substitutes are more expensive than wood alcohol, and this is the sole reason for employing the latter. Either the making of the stuff should be prohibited, or if its commercial use is allowed, safeguards should be thrown around it. The oft-repeated recommendation that it be made unfit for drinking purposes by the addition of some vile-tasting compound should be made mandatory if its use be allowed. Denatured alcohol, as it is called, contains a certain amount of wood spirits, but its taste and odor are so repellant as to make its bodily use, internally or externally, usually impossible. Individuals, firms or corporations using wood alcohol should be compelled to report the fact to the State Board of Health, and this board should have the legal right to regulate conditions surrounding the use of the poison. For instance, its use in vaults, vats and ill-ventilated places is a terrible menace to sight and life, and the state board should have the right to inspect and regulate such conditions. Those using it should take special pains to instruct their employees regarding its dangers. Its sales in groceries, drug-stores, etc., should be surrounded by the usual precautions taken with other poisons. Every bottle sold containing wood alcohol should bear the label "Poison—Totally Unfit for Either External or Internal Medical Uses." The State Board of Health should have the right to inspect barber-shops[6] whose proprietors without any evil intention whatever, could easily use preparations of "witch-hazel," cologne spirits, etc., made out of wood alcohol by unprincipled manufacturers. All these are but suggestions. The lesson which I wish to impress from these cases is that commercial greed is again threatening the community with this insidious poison, and that it is the duty of our profession to combat this tendency in every possible way.

842 Park Avenue.

6. The subject of barber-shops is touched on in the editorial, Wood Alcohol—Poison, THE JOURNAL A. M. A., April 19, 1913, p. 1231.

EXPERIMENTAL IMMUNITY IN RELATION TO THE AGGLUTINATION REACTION IN TYPHOID*

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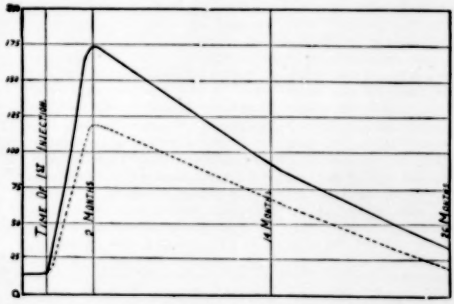
CHICAGO

The prevention of typhoid fever by injecting killed typhoid bacilli into the body is a comparatively recent procedure which is rapidly becoming general. The question naturally arises, How long will the immunity thus produced persist after treatment? It is impracticable to determine this by direct experimentation on the immunized patient, but it is known that acquired immunity is associated with the presence of antibodies in the blood, and the persistence of these may be taken as an approximate index to the persistence of the immunity.

In November, 1910, a number of students at Kansas University were availing themselves of the antityphoid inoculation offered by the university authorities, and it occurred to me as an opportunity to follow the effect of this treatment on the agglutinins of the serum. Accordingly a sample of blood was taken from each of a number of students previously to the first injection and the serum tested for agglutinins. As stated in a previous report[1] the dilutions above which these normal serums showed no agglutination ranged from 4 to 16. Three injections were given, at intervals of one week or ten days, of a suspension of killed typhoid bacilli. This was made by washing the bacilli from the surface of twenty-four-hour agar cultures with salt solution, and sterilizing at 60 C. (140 F.) for an hour on three consecutive days. The suspension contained approximately 1,000 million bacilli to the cubic centimeter as estimated in the Thoma-Zeiss counting-chamber. The first injection consisted of 0.5 c.c., the second of 1 c.c. and the third of 2 c.c. or 2,000 million bacilli. Only a few students took the third injection, and these gave symptoms of malaise, dizziness, headache, mental dulness and slightly elevated temperature for two or three days following. These symptoms were present in a minor degree after each of the first two injections.



Agglutination curves; solid line, average curve of those who received three injections; line of dashes, average curve of those who received two injections.

Samples of the serums were again tested for agglutination after the inoculations at intervals of two months,

* From Kansas University and the Memorial Institute for Infectious Diseases, Chicago.

1. Tr. Chicago Path. Soc., 1912, viii, 252.

one year, and two years respectively. The results are given herewith in tabular form. The accompanying curve of agglutination represents the average curves of all those tested except that those who were reinjected twelve months later were omitted from the subsequent averages. The crest of the curve is represented at the two-month interval, although from the data at hand we cannot determine whether it should occur exactly at this time or somewhat earlier or later.

AGGLUTINATING POWER OF SERUMS TESTED BEFORE AND AT VARIOUS INTERVALS AFTER ANTITYPHOID INOCULATION

Name	Agglutination Before	2 Mo.	1 Yr.	2 Yrs.	Remarks
W. S.*	8	192	96	12	Typhoid 10 years before
D. S.	32	128	192	16	Typhoid 8 years before
E. W.*	12	256	64	32	Typhoid 9 years before
H. C.*	4	96	192	64	Reinjected 12 months later
T. A.	16	96	256	..	Reinjected 12 months later
F. C.*	24	192	128	..	.....
W. W.*	8	192	48	..	.....
L. F.*	16	192	96	8	.....
W. Q.	8	64	48	16	.....
F. J.	8	128	48	16	.....
J. L.	16	128	24	12	.....
J. M.	8	128	48	8	.....
H. J.	16	192	32	..	.....
C. H.	12	96	96	12	.....
A. H.	16	96	48	12	.....
V. M.	16	128	64	32	.....
M. S.*	16	96	..	..	.....
E. B.	16	64	..	..	.....
M. C.	12	64	..	..	.....
M. B.	8	128	..	..	.....
Control	16	16	..	..	.....
Control average of 4 normal serums			12	9	.....

* Received the third injection.

The numbers in the table do not represent complete agglutination, but represent the highest dilution at which definite clumping of the bacilli was observed. This was determined by microscopic examination after two hours at room temperature. Attention should be called to the fact that the strain of typhoid bacilli used in making the last two series of tests was more resistant to agglutination than that used in the first two series, as shown by the controls. Hence the amount of agglutinins present was relatively greater than the figures of the last two columns show, though they have almost disappeared after twenty-six months.

It cannot be assumed that the degree of resistance to the disease runs directly parallel with the agglutinins of the serum, since other antibodies than agglutinins are concerned in the production of immunity and these are present in varying proportions at different times. It is believed that a patient who has had typhoid fever retains resistance to the disease after the agglutinins have disappeared from his blood. Naturally it would be expected that the same would hold true with immunity produced by antityphoid inoculation.

Another side of the experiment is that which has to do with the agglutination reaction as a diagnostic test. It is self-evident in this experiment that if one of these students had suffered from a disease of obscure character and the attending physician had based his diagnosis on a positive agglutination test, the result might have been a serious error. Considering this phase together with the increasing use of antityphoid inoculation, the physician should be on his guard, and before placing any reliance on a positive agglutination reaction should assure himself that the patient has not been inoculated with typhoid bacilli within at least two years.

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WHERE IS THE FUNDUS OF THE BLADDER?*

BRANSFORD LEWIS, B.Sc., M.D.
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Some years ago my attention was attracted to what appeared to me a curious eccentricity of nomenclature in vesical anatomy, namely, that of applying to the top of the bladder the term "fundus"; a word evidently allied to and having a common origin with such words as "foundation," "fundament" or base. It seemed unreasonable and illogical, and yet the evidence that it was correct appeared on all hands; in all current writings such usage was in vogue. On the other hand, the term "fundus of the uterus," in which the base was pointed upward, seemed unquestioned as to its authenticity and anatomic regularity.

So for a time my doubts were quieted; but gradually my Missouri instinct prevailed and I sought headquarters for information on the subject. Every book on anatomy that I consulted not only failed to give sanction to such usage, but also applied the term "fundus," as do the French in *bas fond*, to the base of the organ. It was described as synonymous with the word "base," and located at the bottom, instead of the top of the organ.

I occasionally mentioned this fact to medical friends in a casual way, and found a contest always awaiting the proposition. It required a treatise on anatomy and a shotgun to support the contention.

I recall that in 1910, when one of our esteemed members was about to read a paper entitled "Carcinoma of the Fundus of the Bladder," I caused him some perturbation for the time being by suggesting that possibly the term "summit," or "vertex," would more correctly represent the area to which he was about to refer in his paper; but his doubts were quickly allayed when he conferred with several members present, who evidently disagreed with my position and confirmed the correctness of the title as given in the program; and so it was read and to-day stands printed in our Transactions of that year. In this paper the author, Dr. Hagner, says: "The fundus of the bladder is a comparatively rare location for new growths, the more common seat being the base"—indicating the fundus as the antithesis of the base.

Some time later, when a guest at a dinner given in Chicago to a dozen or so of urologists, I happened to mention this incident and the point of contention. I was saved from mob violence at the hands of those present only by the existence in the host's library of several books on anatomy of undoubted authority, all of which gave me unqualified support.

To be convinced of the fact that the use of the term fundus of the bladder is widely prevalent in current writings, even by men of high standing in the profession, one need only review recent literature on bladder surgery. Authors of modern text-books also use the term in the same sense. Thus, Keyes, Junior,[1] describes the divisions of the bladder: "These four sides meet above in the fundus, below and in front in the neck, which is the urethral orifice." Many other authors no less distinguished locate the fundus at the summit of the bladder.

On the other hand, Guiteras[2] says: "The base or fundus looks downward and backward." Watson and

* Read before the American Urological Association, at Boston, April 16, 1913.

1. Keyes: Genito-Urinary Diseases, 1904, p. 328.
2. Guiteras: Urology, 1912, i, p. 46.

Cunningham[3] divide the bladder into the summit or apex, the body, the base and the neck or cervix. While the word "fundus" is not used in this connection, we find it mentioned by these authors on page 539 of the volume quoted in connection with the location of tumors of the bladder, thus: "None of these three tumors occupied the same part of the bladder as the original one; the former was on the right side of the trigone; those found at the second operation were near the fundus." But the question remains, where is the fundus?

It is apparent, therefore, that ambiguity and confusion attend the use of this term with reference to the bladder, and it would be worth while to straighten out the tangle. This may be done by referring to all of the modern treatises on anatomy of recognized authority. In all of these, without exception, the following divisions of the bladder are given: (1) the summit or vertex; (2) the base or fundus; (3) the body, and (4) the cervix or neck. There are, naturally, variations in the wording of the divisions, but there is no lack of harmony in the use of the term "fundus of the bladder."

I believe, therefore, in view of the prominence of this term in medical literature, of the frequency with which it is used in writings on vesical surgery and the evident confusion to which it has been reduced, that it is deserving of a better fate. Further, it should be recognized as having its own proper location and sphere of activity, and, like the conventional tub, the bladder should be permitted to stand on its own bottom, namely, the base or fundus.

550 Century Building.

RARITY OF SARCOMA OF SCLERA

REPORT OF A CASE WITH REMOVAL AND NO RECURRENCE

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The rarity of sarcoma, and especially of primary sarcoma, of the sclera is a fact admitted by some of the leading authorities in ophthalmology and pathology. Many give it scant attention, while others, like May[1] and Adami and Nicholls[2] make no mention of it.

In view of its rarity, a report of the following case of primary sarcoma of the sclera may prove of interest.

Patient.—E. W., colored Jamaican, aged 25, was referred to Out-Eye Clinic, Colon Hospital, Cristobal, Canal Zone, late in October, 1906. Two years before patient had noticed feeling in left eye as if there was a piece of gravel in it, as also a small swelling or tumor. This tumor grew gradually until a month or more before patient came to the clinic, about which time the growth became much more rapid. When I first saw patient the tumor was quite noticeable. Vision had been failing for the past four months. Pain had been neither pronounced nor frequent.

Examination.—Tumor was located under bulbar conjunctiva inferiorly, and thus partly concealed by lower eyelid. There were bluish spots over tumor, evidently congested veins. On admission to eye-ward of hospital late in November, the tumor had either grown so in size or caused such swelling of the superimposed conjunctiva that a roll of the latter partly obscured and was in contact with the cornea. Cervical lymph-nodes of the left side were greatly enlarged. Clinical diagnosis made of malignant growth of sclera, probably sarcoma. Abscission or, failing in that, enucleation of the eye, was advised and consented to.

Operation.—Early in December, 1906, under general anesthesia, I tried to remove the tumor, assisted by Dr. Lloyd Noland, chief of surgical clinic, but soon found that it would be impossible to do so without destroying the eye, and so did an enucleation. On laboratory examination the tumor proved to be a small round-cell sarcoma of sclera, and was so reported by Dr. Norman Williamson, pathologist.

About ten days later I assisted Dr. Noland in an operation on same patient. By extensive work the affected cervical lymph-nodes before noted were removed as thoroughly as possible. About two weeks later, the patient was delirious for a few days, and we feared metastasis to brain; but the delirium left him. He was in due time discharged and fitted with an artificial eye. I saw him at intervals, never greater than six months, up to his last visit to me in March, 1912, five years and three months after last operation. Patient had continued in splendid health, with no signs of recurrence.

There is a difference of opinion among writers as to the malignancy and proneness to recur of epibulbar sarcoma. Derby[3] quotes both sides with seeming fairness. On the one side Strouse's statistics of twenty-four cases, with his conclusion that conservative measures, including primary abscission, are not contra-indicated. On the other hand Verhoeff and Loring, with the most complete statistics yet published of fifty-three primary abscissions, conclude that "after abscission the tumor sooner or later usually recurs and general metastases are not infrequent." Berry and Parsons, and apparently Derby himself, are strongly inclined to the same belief as Verhoeff and Loring, and thus all favor enucleation of the affected eye, rather than abscission of the tumor.

I wish to thank Col. W. C. Gorgas, Chief Sanitary Officer, Isthmian Canal Commission, for permission to report this case.

805 Empire Life Building.

3. Watson and Cunningham: Genito-Urinary Diseases, 1908, I, p. 435.

1. May: Diseases of the Eye, Ed. 4, Revised, 1905.
2. Adami and Nicholls: The Principles of Pathology, Ed. 1.

BILATERAL AND MULTIPLE ECTOPIC PREGNANCY

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Multiple ectopic pregnancy is by no means an uncommon occurrence. Like a great number of other medical rarities, it has been more frequently found when observers are educated to look for it.

The fact that twin ectopic pregnancy is proportionately more common than is normal twin uterine pregnancy has led Barnes to suggest that twin conception is a cause of ectopic pregnancy. This, however, is mere theory and has no definite basis of proof.

Multiple ectopic pregnancy may be divided into several classes. There may be pregnancy in the uterus with a tubal pregnancy; this is called combined pregnancy. There may be a pregnancy in each tube—bilateral ectopic pregnancy. There may be a pregnancy with both embryos in one tube—twin tubal pregnancy. These conceptions may begin at the same time or one may begin later than the other, or they may begin at the same time and the development of one may be retarded and the other may continue to grow. As a result of this, the fetuses are very often unequal in size and the varieties of multiple ectopic pregnancy may best be shown by the following table.

Twin ectopic pregnancy has been recorded a number of times in recent years. It is usually found only in

3. Derby, George S.: A System of Ophthalmic Operations, Edited by Casey Wood, 1911, p. 646.

TABLE 1.—MULTIPLE ECTOPIC PREGNANCY

Bilateral Ectopic Pregnancy:
1. Simultaneous.
2. Different ages.
3. One ovarian, one tubal.

Twin Tubal Pregnancy:
1. Simultaneous.
2. Different ages.
3. Twins on one side and one fetus on the other.

the early stages of the disease and so, since the treatment of the disease by operation, this condition has been increasingly found. It must be remembered that it was only in 1883 that Veit did the first operation with a confirmed diagnosis of ectopic pregnancy and Janvrin in 1888 was, we believe, the first in this country. So the condition has not had a great number of years of study.

It is difficult always to distinguish whether cases of ectopic pregnancy are true twin pregnancy. Many cases that have been reported as twin pregnancies are cases in which one gestation has been retained in a tube and another has been deposited in the same tube. Cases have been reported in which the first was retained as a lithopedion and a second tubal pregnancy occurred in the same tube. Several cases have been reported, in which there has been a gestation retained in one tube and by transmigration of the ovum a conception came from the opposite ovary and deposited itself in the tube already holding the first gestation.

The fetuses of a simultaneous twin tubal gestation are not always of the same size. One may die or its growth cease, while the other may thrive and grow. This is also possible when the fetuses are nourished by a single placenta.

As a result of these vagaries, it is always difficult to say whether the fetuses in a twin tubal pregnancy are really twins and of the same age or whether it is only a repeated tubal pregnancy in which one conception has followed another in the same tube. We have collected thirty-nine cases of twin tubal pregnancy in which the evidence is reasonably sure; that is, the fetuses are either of the same size and character or are nourished by a single placenta, or the careful history gives no other record of more than one syncopal attack. This, it

TABLE 2.—BILATERAL ECTOPIC PREGNANCY, PROVED CASES

Author	Reference	Right Tube	Left Tube	Remarks
Ryford	*Am. Jour. Obst.*, 1893, xxviii	Fetus	Fetus	Different ages
Burford	*Med. Press and Circ.*, 1905, lxxix, 533	Fetus 38 mm.	Fetus 41 mm.	Same age
Boissard and Coudert	*Obstétrique*, 1900, iii, 6	Fetus	Fetus	
Galabin	*Brit. Med. Jour.*, Oct. 10, 1892	Fetus	Fetus	
Von Ott	*Jour. Geburtsh. u. Gynäk.*, 1892, p. 482	Fetus	Fetus	Same age
Martin	*Ztschr. f. Geburtsh. u. Gynäk.*, 1897, xxxviii, Part 1, p. 144	Fetus	Fetus 2 mm.	Different ages
Ruder	*Deutsch. med. Wchnschr.*, 1902, p. 50	Fetus 2 mm.	Fetus 3 mm.	Different ages
Psaltoff	*Ann. de gynéc. et d'obst.*, 1903, lix, 376	Fetus 4 mm.	Fetal mummy 3 yrs.	Different ages
Walter	*Brit. Med. Jour.*, 1892, ii, 732	Fetus	Fetus	Different ages
Ferguson	*Edinburgh Med. Jour.*, February, 1899	Lithopedion	Fetus	Different ages
McCalla	*Surg., Gynec. and Obst.*, March, 1909	Fetus	Fetus	Different ages
Werth	Winckel's Handbuch der Gynaekologie, ii, 2	Fetus 32 mm.	Fetus	Same age, 8 weeks
Finsterer	*Ztschr. f. Heilk.*, 1909, xxviii, Supplement	Fetus	Fetus	Same age, 8 weeks
Launell	Mitheilungen aus der gynaekologischen Klinik des Dr. Otto Engstrom, 1910, vii, 2	Clot. Chor. Villi	Fetus	Same age, 8 weeks
Findlay	*Surg., Gynec. and Obst.*, July, 1910	Clot. Chor. Villi	Clot. Chor. Villi	Same age, 8 weeks
Davidsohn	*München. med. Wchnschr.*, Jan. 6, 1912	Fetus	Fetus	Same age, 6 weeks
Moreau	*Thèse de Paris*, 1853	Fetus	Fetus	
Pelak	*Brooklyn Med. Jour.*, 1904, xviii, 242	Fetus	Fetus	L. Interstitial
Pozzi	Soc. d'Obst. et Gyn. Paris, Jan. 14, 1901	Fetus 4 mm.	Fetus 7 mm.	Different age
Milligan	THE JOURNAL A. M. A., Jan. 13, 1912, p. 114	Fetus	Fetus	Same age
Launay and Sequinot	*Rev. de Chir.*, April, 1911	Fetus 3 mm.	Twin fetuses smaller	All same age
Winckel	*Verhandl. d. deutsch. Gesellsch. f. Gynäk.*, 1888, ii, 82	Fetal mummy	Fetal mummy	Different ages
Labbardt	*Beitr. z. Gynäk. u. Geburtsh.*, 1910, xiv, i, 155	Clot. Chor. Villi	Clot. Chor. Villi	No fetuses
McDonald & Krieger	This paper	Fetus	Fetus	Different ages
McDonald & Krieger	This paper	Fetus	Clot. Chor. Villi	Same age

TABLE 3.—BILATERAL ECTOPIC PREGNANCY PROBABLE, BUT NOT PROVED

Author	Reference	Right Tube	Left Tube	Remarks
Frederick	*Am. Jour. Obst.*, November, 1901	Ruptured blood-clot	Ruptured clot	
Rosenstein	*Deutsch. med. Wchnschr.*, March 26, 1904	Fetus	Blood-clot	
Bloom	*Philadelphia Polycl.*, 1894, iii, 292	Clot	Clot	Uterine abort. 3 weeks before
Christie	*Medicin. Revue*, 1897, xiv, 1	Fetus 2 mm.	Tubo-ovar. clot	
Kristmus	*Wien. klin. Wchnschr.*, 1902, xv, 47	Fetus	Clot	Syncytial cells
Noble, G. A.	*Am. Jour. Obst.*, April, 1901	Fetus 8 wk.	Clot	Hemorrh. from uterus
Roibins	*Atlanta Jour. Med.*, April, 1901	Fetus 6 wk.	Unrupt. clot	
Barker	*Surg., Gyn. and Obst.*, 1907, v, 1	Clot	Fetus	Uterine memb. passed
Wilson	*Austral. Med. Jour.*, 1909, xxix, 4	Clot	Clot	Two syncopes
Greenberg	THE JOURNAL A. M. A., Aug. 17, 1907, p. 575	Clot	Clot	Bleeding into bladder
Weinleckher	*Ber. d. Geburtsh.-Gyn. Gesellsch. Wien*, April 12, 1900	Clot	Clot	Corpus luteum in each ovary
Savage	*Brit. Med. Jour.*, 1892, i, 556	Clot	Clot	
Grosser	*Tr. Lucerne Co. Med. Assn.*, Wilkes-Barre, 1903, xi, 126	Clot	Clot	
Chandler	*New York Med. Jour.*, 1903, lxxviii, 320	Fetus	Clot	
Torrio	*Finska Läk.-sällsk. handl.*, 1896, xxxviii, 9	Clot	Clot	
Giglio	*Ann. di obst. e gin.*, 1898	Clot	Clot	
Heady	*Cincinnati Lancet-Clinic*, 1897, xxxix	Clot	Clot	
Janeway	*Med. Rec.*, N. Y., 1879, xvi	Fetus	Clot	Corp. lut. in left ovary
Jayle and Mandrot	*Rev. gyn. et chir. abd.*, 1904, viii, 195	Fetus	Clot	
Johnson	*Boston Med. and Surg. Jour.*, 1894, cxxx, 256	Clot	Fetus	
Stehman	*Am. Gynec. and Obst. Jour.*, June, 1896	Clot	Fetus	
Rabinovitch	*Thèse de Paris*, 1906, No. 48	Fetus	Clot	
Rowan	*Austral. Med. Jour.*, 1890	Clot	Clot	
Riegenbeck von Heukelom	Recueil des travaux anatomo-pathologiques du Laboratoire Boerhaave, Leyden, 1889	Fetus	Clot	
Pneonnet and Lefort	*L'Echo méd. du Nord, Lille*, 1899, ix, 139	Fetus	Clot	
Newton	*Boston Med. Jour.*, Aug. 26, 1905	Fetus	Clot. Decid. cells	
Coffey	Proc. West. Surg. and Gyn. Assn., Dec. 30, 1909	Fetus	Clot	

must be confessed, is not very accurate evidence, but it is the best available. The citation of the cases would offer little of interest save for some isolated ones.

Treub, for example, has the photograph of five embryos, removed by a colleague from one tube. They were about 3 or 4 months old and apparently all of the same age. Krusen has reported triplets in one tube, and Launay operated on a patient with twins on one side and a single fetus on the other, all apparently of the same age—about 3 months.

Sometimes there is only one sac; sometimes there are two sacs. One ovum is sometimes found free and sometimes both are free. It is not exactly correct to call a gravid tube with two fetuses a twin tubal pregnancy, but it is very difficult to prove it is not. Occasionally the history is so definite as to isolate the two gestations or the character of the fetuses may be so different as to make it sure that they are of different ages. It should be remembered, however, that one may grow and the other may not, even if they are conceived at the same time, and that repeated conception may occur in the same tube.

Bilateral ectopic pregnancy is subject to the same uncertainty. One gestation may be retained and another occur in the other tube. A lithopedion even may be in one tube and a gestation occur in the other tube. Then again, it is possible for the gestations to be of the same age and the growth of one to be stopped, while the other continues. Of the bilateral ectopic pregnancies here collected, where the ages were noted, in eleven cases the fetuses were of the same age, and in ten cases they were of different size and apparently of different ages.

An interesting fact in the study of bilateral ectopic pregnancy is that the presence of blood-clot in a tube when the opposite tube contains a fetus is no proof that gestation has occurred in both tubes. The presence of decidual cells in one tube, while the other has a gestation, is no proof that gestation has occurred in the tube with decidual cells and no fetus.

Definite decidua has been reported in the uninvolved tube by Kroemer,[1] Haultain[2] and others. In two cases of our own, in which the uninvolved tube was removed to prevent recurrence, as the women already had several children and the percentage of recurrence is one in twenty, there were decidual cells present in the apparently normal tubes.[3]

Ferroni has also shown that in the microscopic study of tubes removed for other conditions, all those tubes which contained blood showed decidual cells. All the cases of hematosalpinx had decidual cells, usually found in some of the folds of mucous membrane and disposed of in patches where there were no adhering coagulations. Over these patches the investing epithelium is well preserved as in other parts of the tube. The reaction was absent in all cases of fluid distention, which was not bloody or only in part bloody. Bazy[4] has reported cases of hemorrhage inflammation of the tubes, which by its clot may simulate tubal pregnancy without any gestation being present.

For these reasons, in the exact anatomic diagnosis of tubal pregnancy, the presence of clot in the tube or the presence of the decidua reaction is not sufficient. To make an exact diagnosis of bilateral ectopic pregnancy, there must be either a fetus or chorionic villi in each tube. In such a rare condition, the diagnosis should be exact. Chorionic villi are essential to placental formation and never exist without pregnancy, while decidual cells may be both in the tube and uterus.

For these reasons, reports of fifty-two cases reported as bilateral ectopic pregnancies have been collected into two groups: one of which has a definitely proved fetus on each side or chorionic villi on each side, and the second which consists of cases that have not this proof or have not been thoroughly studied. In this second table, it is probable that most of the cases are true bilateral ectopic pregnancy, but search has not been made for chorionic villi in the walls of the tube.

We have added to these lists two cases which are of interest. One patient had apparently three pregnancies, one in each tube and a uterine one which miscarried. She had two separate and individual ruptures with shock and collapse. The full histories are appended with the pathologic reports.

CASE REPORTS: BILATERAL ECTOPIC PREGNANCY

CASE 1.—*History.*—Patient, aged 38, married, tertipara, complained of pain in lower abdomen and uterine hemorrhage. History at that time showed that the patient had suffered from pelvic inflammatory disease about two years previously. Three months before entering hospital failed to menstruate, but menstruated profusely two months before. At that time she had an attack of fainting and thinking it a natural consequence called no physician. Bleeding was very profuse. From that time on she had symptoms of pregnancy and believed herself to be so. Hemorrhage continued varying in amount, although always present each day from May and the patient was confined to bed from that time up to entering the hospital. After entering the hospital, condition continued every day the same until July 5, when the abdominal pain was greatly aggravated and the patient was in a condition of shock from which she slowly rallied.

Examination.—The patient was very pale and anemic, pulse 110, temperature 99. There was abdominal distention and tenderness on superficial palpation. An irregular mass was felt over the symphysis about as large as a grapefruit, and both the inguinal rings were fuller than normal. Intestines were generally tympanitic. The glands were found to be enlarged and soft on abdominal examination. A boggy mass of irregular consistence filled uterus and entire pelvis, a portion being so firm as to give the impression of a fibroid, the other portion feeling like a recent hematoma. Neither the body nor the appendages could be identified from this general mass. The vaginal wall and cervix were cyanotic. Breasts were swollen and contained colostrum. In view of the clinical history and of the occurrence in May and July a diagnosis of ectopic pregnancy with multiple hemorrhages was made.

Operation.—An immediate operation was performed. Large quantities of partly coagulated and fluid blood, no way encapsulated, was found. Uterus, ovaries and blood-clot filled the pelvis, and it was difficult to demonstrate anatomic relations. Patient was placed in the Trendelenburg position and adhesion separated, so that the anterior wall of the uterus could be identified. By careful dissection of the adhesions both the lateral masses were removed, consisting of diffuse hemorrhages and tumor mass.

Postoperative History.—The family physician stated that four or five days after the operation the uterus expelled *en masse* the remains of placental tissue and fetus. He examined this personally and made the report. The patient made a slow recovery.

Pathologic Report.—The specimen consists of both tubes and ovaries, together with two fetuses.

The ovaries are normal in size. One ovary measures 3 by 2 by 1 cm., and is normal in appearance. The other ovary is larger, measuring 3.5 by 2 by 1 cm., and on section is found to contain a very large corpus luteum of pregnancy. There are a few adhesions on each side between the tubes and ovaries.

1. Kroemer: Arch. f. Gynäk., 1903, lxviii, 57.
2. Haultain: Jour. Obst. and Gynec., Brit. Emp., 1906, ix, 6.
3. These specimens were examined at the Bender Laboratory. We owe thanks to Dr. R. M. Pearce, late director.
4. Bazy: Rev. de gynéc., 1911, xx, July.

Both tubes are greatly enlarged and contain a brownish-red material, having the appearance of clotted blood. Springing from each tube at one point is a fungoid mass of grayish-white granular-looking growth, which has the characteristic appearance of masses of chorionic villi. Connected with each tube is a fetus. On one side the fetus is well preserved, is 9 cm. in length, and is attached to the material having the appearance of chorion by an umbilical cord 15 cm. in length. In this fetus the finger-nails are already apparent; the external ear, although still rudimentary, can be made out, and the eyes and other features are fairly well developed. The cavity of the mouth and tongue are well formed. The fetus on the other side appears to have undergone an arrest of development. It is brownish in color. Its lower limbs are perfectly apparent, as are its upper ones, but its trunk and head are contained in a well-defined capsule composed of firm tissue, apparently of the nature of connective tissue. A definite head and face cannot be made out in this fetus. In the portions apparent the fingers and toes are differentiated and the finger-nails are well formed.

Anatomic Diagnosis.—Bilateral extra-uterine pregnancy.

CASE 2.—*History.*—Patient, aged 28, housewife, complained of pain low in abdomen on left side. Menstruation was normal. Last period was slightly less than usual (see below). Patient noticed soreness in left lower abdominal quadrant about fifteen days before examination and had twinges of pain in this region. About five days later physician noticed a tumor at this site. If lying down and turning toward right side, she could feel something drop, from left to right, felt as if something were going to fall out of her. She had distinct sensation of pain at last menstruation, which lasted three days, stopped for a very short time, and then began as a continuous flow of brownish, watery fluid.

Operation.—On opening the peritoneal cavity there was found a small amount of free, blood-stained, turbid fluid. Partially beneath the sigmoid on the left side and firmly bound down by new-formed tissue was a mass the size of a small orange. This was the left tube and ovary, the seat of an ectopic pregnancy. The adhesions being broken up with some difficulty, the mass was brought up and the tube and broad ligament on the left side were clamped off and removed. The right ovary was macerated and lay behind the uterus and bound down by adhesions in the pelvis. This ovary was about the size of a hen's egg. On breaking up the adhesions this appendage was found the seat of a second ectopic gestation. This tube and the ovary (which was intimately associated with the ectopic mass) were removed and tied in the same manner as on the left side. The remaining portions of the broad ligaments were brought over and sutured to the cornua of the uterus, thus walling off from the abdominal cavity the raw surfaces produced by the liberation of the bound-down appendages. The patient's recovery was uneventful.

Pathologic Report.—Specimen consists of (1) fallopian tube 10 cm. long and (2) gestation sac. (1) Peritoneal surface in proximal two-thirds is grayish pink, smooth and glistening and tube is slightly thickened. In distal one-third peritoneum is greenish brown. Fimbriated extremity is absent and represented by a soft boggy mass measuring 6 by 4 by 4 cm. On section cut surface is irregular, reddish brown and is apparently blood. (2) The sac is a round somewhat firm mass; the outer surface varies in color from grayish yellow to bluish black. Surface in part is rough, due to dissection and in part covered by peritoneum and has numerous fibrous tags attached. On section cut surface shows a cavity within the mass lined by a smooth glistening membrane. Within this cavity is a fetus about 2.5 cm. long, which is attached to the wall by a cord. About this cavity the cut surface is mottled reddish-brown in color.

Anatomic Diagnosis.—Double ectopic gestation. Chronic pelvic peritonitis. Decidual cells and chorionic villi shown by sections from the walls of the sac of each tube. Necrosis of the decidual tissue and thrombosis.

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EROSIVE AND GANGRENOUS BALANITIS

THE FOURTH VENEREAL DISEASE

A FURTHER REPORT*

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In May, 1909, Dr. Frederick G. Harris and I[1] reported our observations on a specific form of balanitis, due to a symbiosis of a spirochete and a vibrio.

This was the first time in this country that attention was drawn to this specific form of balanitis, although abroad Scherber and Müller[2] had classified this form of infection and proved conclusively that balanitis gangraenosa was identical with the *balano-posthite érosive circinée* of Bataille and Berdal,[3] only representing different degrees of severity.

Notwithstanding the fact that reports have come from McDonagh[4] in London, Scherber[5] of Finger's clinic in Vienna, Dind[6] in Switzerland, Romeo[7] in Italy and Kallionzis[8] in Greece, since Scherber and Müller's[2] publication in 1904, an extended search of the American current literature and text-books still shows a lack of appreciation of the virulency of these organisms.

Scherber's second and extensive communication[5] on the different forms of balanitis, published in 1910, describes the condition in detail.

Erosive or gangrenous balanitis is a specific infectious venereal disease, with local and constitutional symptoms varying with the severity of the infection. The cause is a symbiosis of a vibrio and a spirochete. These two organisms are always found together. Both have been demonstrated in sections, in the blood-vessels and in the inguinal nodes.

Predisposing causes are (1) a long, tight foreskin excluding the air, always present to a greater or less degree; (2) wetting the labia or penis with saliva, and (3) unnatural sexual relations, after alcoholic excesses.

In private practice in this country the disease is uncommon, probably occurring once in two hundred cases; but in dispensary work, in which material comes from the lower walks of life, the infection is fairly common. Scherber[5] reports eighty-one cases that occurred in Finger's clinic in four years.

That more cases are not reported in this country is due, I believe, to the lack of recognition, and it is with this idea in view that I have had the accompanying illustrations made.

BACTERIOLOGY

Abundant evidence is at hand to show that in noma and in Vincent's angina the etiologic factors are a spirochete and a vibrio. Rona[9] says that "noma begins without exception in gangrenous stomatitis. If the fusiform bacillus and spirochete found in the mouth are etiologic factors in gangrenous stomatitis, since the organism is found in such abundance in noma, it must be due to the same cause."

* Read before American Urological Association, April 15-17, Boston.

1. Corbus, B. C., and Harris, Frederick G.: Erosive and Gangrenous Balanitis, the Fourth Venereal Disease, THE JOURNAL A. M. A., May 8, 1909, p. 1474.
2. Scherber and Müller: Arch. f. Dermat. u. Syph., lxxvii, 77.
3. Bataille and Berdal: Méd. mod., 1893, ii, 340.
4. McDonagh: West London Med. Jour., 1911, xvi, 131.
5. Scherber: Handbuch der Geschlechts-Krankheiten, 1910, i, 153.
6. Dind: Rev. méd. de la Suisse Rom., 1911, p. 592.
7. Romeo: Gazz. d osp., Oct. 4, 1910, p. 1257.
8. Kallionzis: Ἐν Ἀθ., 1910, xv, 385.
9. Rona: Arch. f. Dermat. u. Syph., 1905, lxxiv, 171

In 1905, Weaver and Tunnicliff[10] described a fusiform bacillus which was isolated in pure cultures in cases of Vincent's angina and ulceromembranous stomatitis. Later, Tunnicliff[11] described three strains of fusiform bacilli isolated in pure cultures from the normal mouth. These resembled the organisms which she found in Vincent's angina and in ulceromembranous stomatitis.

In the first publication on this subject, by Harris and myself,[1] numerous authors were cited and abundant clinical proof was obtained to substantiate the pathogenicity of these organisms.

The accompanying photomicrograph (Fig. 1) from Tunnicliff's[12] work shows typical vibrios and spirochetes cultured from a case of noma, and Tunnicliff believes the organism to be one and the same only representing different stages of development. Ellerman[13] takes exception to this, however, calling attention to the lack of motility of the cultured organism.

I have repeatedly examined the spirochetes found in Vincent's angina under the dark-field illuminator. Here the organism is identical with that found in erosive and gangrenous balanitis, the motility being one of the characteristic and diagnostic features.

Since the conditions that favor the growth of these organisms—heat, moisture, filth and absence of air—are more ideal in the genitalia than in the mouth, it is easy to conceive how an organism may leave its normal saprophytic domain and under proper anaerobic conditions become pathogenic and produce extensive destruction.

Examinations of vaginal secretions of one hundred normal women[3] showed bacteria and spirochetes similar to those found in smegma, but no spirochetes of balanitis.

In eleven cases of clinically evident vulvitis and vaginitis, vibrios and spirochetes were found.

ETIOLOGY

As shown in Figure 2, the vibrio and spirochete are the predominating organisms found. We can easily argue, as did Rona, in 1905, that if the fusiform bacillus and the spirochete found in the mouth are etiologic factors in gangrenous stomatitis and gingivitis, erosive and gangrenous balanitis must be due to the same cause, since the organisms are found in such abundance in these conditions, and especially since in the histories of all my cases unnatural sexual relations or a wetting of the labia were admitted.

The vibrio grows under anaerobic conditions on serum-agar. It occurs singly or in chains of two or more individuals. It is a slightly curved rod-shaped organism with pointed ends, measuring about 2 microns in length and 0.8 microns in width. It stains by the ordinary dyes and is Gram-positive, although the decolorization must be performed very carefully, as the organism gives up the gentian violet readily. It is preferable to use 70 per cent. alcohol for this purpose.

The spirochete is Gram-negative, but stains with the ordinary dyes; with the Giemsa stain it takes a bluish red. These organisms are best seen with the dark-ground illuminator. They average from 6 to 30 microns in length and about 0.2 micron in width. The windings are not acute and the ends of the organism terminate in the center of the spiral. The motion of the organisms is very rapid; they travel from place to place, resembling small snakes; they have a rotary motion, but this is not so pronounced as the backward and forward motion.

After unsuccessful attempts at animal inoculation with cultures, Scherber[5] does not believe in the pathogenicity of the fusiform bacillus and considers the spirochete responsible for the lesions.

A rapid and simple method of collecting the pus is by capillary attraction with small capillary pipets. These may be pushed deep into the ulcers and a quantity of fresh discharge obtained. The pus may be examined with the dark-field illuminator, or fixed and dried and stained from two to three minutes with carbolfuchsin. It is to be examined without cover-glass with oil immersion (the method used in Figure 2).

PATHOLOGY

The pathologic condition in the milder forms of balanitis erosiva circinata consists simply of a flaking off of the epithelium, leaving small superficial erosions. When the desquamation is more marked there are bright-red ulcers, which are surrounded by a small white zone, the remains of the necrotic epithelium.

In the surrounding tissue there is an exudation of leukocytes and plasma. The organisms are found in the necrotic membrane. At times they can be demonstrated in the tissues and blood-vessels, as shown by Scherber and Müller.

In the more severe grades of infection there is more venous stasis and more exudation, resulting in marked phimosis which predisposes to gangrene. As Scherber and Müller[2] pointed out, the whole condition is one of degree only, but for clinical purposes we may distinguish two types: (1) balanitis erosiva circinata and (2) balanitis gangraenosa.

SYMPTOMS

Balanitis erosiva circinata commences with the appearance of one or more small grayish-white patches in the preputial sac. At the time of the development of the erosion an offensive thin pus is produced, of a characteristic stinking odor and of the usual yellowish-white; in the more severe cases it becomes grayish-white or grayish-brown.

Pus from lesions is innocuous.[3] In its development the inoculation never becomes pustular, but necrosis of the epithelium always represents the beginning, and the future process is polycyclic.

Infection shows a preference for the sulcus coronarius, next on the inside of the prepuce and last on the glans. In development all of the glans penis is affected and under favorable anaerobic conditions the whole fossa navicularis is affected. It must be borne in mind that more or less phimosis is an essential factor.

In the mild cases the foreskin may be easily retracted, but in the more severe forms marked phimosis develops; there is considerable itching and burning behind the glans; the act of urination is practically without pain. In contradistinction to the gangrenous form in this type of the disease, constitutional symptoms are slight or absent.

As the process follows no hard and fast lines there are certain deviations from the foregoing picture. The process may be limited to the glans and the inner surface of the foreskin may be unaffected. This may be extreme or mild, but is always present on the covered portions of the glans.

10. Weaver and Tunnicliff: Jour. Infect. Dis., 1905, No. 2, p. 446.
11. Tunnicliff: Jour. Infect. Dis., 1906, iii, 148.
12. Tunnicliff: Jour. Infect. Dis., 1911, viii, 316.
13. Ellerman: Centralbl. f. Bacteriol., 1905, xxxviii, 383.

The inflammatory condition may remain a purely erosive superficial process and may recover spontaneously. Berdal says that in simple cases healing takes place in four or five days. Scherber has seen spontaneous healing almost completed in forty-eight hours by simple washing and admission of air by retracting the foreskin. He further states from observation that the height of the development usually occurs in from four to eight days after exposure to infection, and that he seldom saw cases of four weeks' incubation and cases persisting for three or four weeks.

In a number of cases the process does not remain superficial, but develops deep diphtheritic and gangrenous ulcers, which complicate the clinical picture in many ways.

In some cases when the foreskin can be retracted, after removal of the pus, small, round ulcers can be seen inside of the erosions, varying in size from that of a pinhead to that of a pea. These ulcers are moderately deep and on the whole flat and surrounded by a red zone. They are covered by a closely adherent pseudomembrane. In other cases the ulcers are more extensive and deeper, the average size being about that of a dime. These may become confluent and extend over the whole surface of the sulcus or the inner surface of the foreskin.

These balanitic ulcers are of a somewhat irregular outline and are surrounded by a small inflammatory, slightly elevated border. This border is clean-cut and the sides somewhat slanting; the base is uneven, with a firm yellowish-white or yellowish-brown membrane, which is often edematous and swollen.

When more edematous this false membrane appears as a sort of friable slime. Here and there may be hemorrhagic spots which sometimes give rise to hemorrhages from the base of the ulcer.

In the severe forms the constitutional symptoms are more marked. Scherber and Müller noticed chills and fever in a majority of their cases and at the onset vomiting. The average temperature ranges from 100 to 101 F. There is marked edema, the external skin being red and edematous; the infiltration may extend to the root of the penis in some cases. The dorsal lymph-cord is usually palpable and the inguinal nodes are enlarged, but not painful. Unless the phimosis is complete there is no pain on urination; when, however, the urine is not able to pass freely and dilates the preputial sac, there is considerable pain.

Fig. 1.—Vibrio and spirochete; culture from case of noma. Slide and culture by Dr. Ruth Tunnicliff.

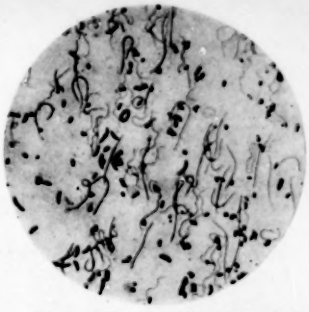

Fig. 2.—Etiologic factors in erosive and gangrenous balanitis.

Fig. 3.—Erosive type. Case 1. Balanitis erosiva; foreskin not retracted; ulcers seen on margin.

Fig. 4.—Erosive type, complicated by syphilitic infection. Case 2. Foreskin retracted; grayish purulent secretion in sulcus coronarius and a few small erosions on the glans.

The discharge is the most profuse in this type of the disease. By gently irrigating the preputial sac with sterile water and wiping the external urethral orifice we can easily exclude gonorrhea by having the patient urinate in two glasses.

In the majority of cases of balanitis gangraenosa there occurs a marked edema of the subcutaneous tissue of the penis which extends to the root and causes a marked phimosis. If the ulcer is situated on the inner surface of the foreskin it shows externally as a dark, bluish-red area within the surrounding bright-red inflammatory tissue. The congestion and abnormal pressure, due to edema, favor the progress of the disease.

Soon the foreskin over the ulcer becomes black, and a complete necrosis of the part occurs. If the ulcer is situated on the glans, in a short time it may produce complete destruction of the glans or may even cause an extremely rapid gangrene of the organ, which may extend even to the root of the penis, as may be seen by my fourth case.

The ulcers in these cases are deep, the edges sharp and perpendicular, the base grayish-green or brownish; or the penis may show hemorrhagic areas or be changed into a black necrotic mass.

The discharge at this time is more offensive than in the erosive type; it is grayish-yellow or yellowish-brown, and at times it may be slightly hemorrhagic, but always with the same characteristic odor. The inguinal nodes are enlarged; there is a mild grade of sepsis present. General malaise is marked. There may be vomiting and the temperature may reach 104. The tenderness of the part is extreme.

Fig. 5.—Erosive type, more advanced stage, Case 3. Foreskin retracted after dorsal incision; deep erosive ulcers with necrotic bases just back of the sulcus coronarius.

DIAGNOSIS

This disease is not so uncommon as one might suspect; unfortunately it is usually mistaken for chancroidal infection. The period of incubation may be the same in the two conditions; but with the characteristic thin yellowish-white, offensive discharge, in which one finds a vibrio-form organism and a spirochete, the diagnosis should not be difficult.

The ulcers of the two forms of infection may simulate each other very closely. In this form of balanitis, when the infection is at all severe, there is marked phimosis and considerably more inflammatory reaction. The enlarged inguinal lymph-nodes are painless, while with a very insignificant chancroidal sore a suppurating bubo is often present.

Chancroidal ulcers are, as a rule, multiple, but they do not spread with so great rapidity as do the ulcerative form of balanitis. Whereas the borders of the ulcers in both diseases have a clean-cut, punched-out appearance, there is greater tendency to undermine the wall in a chancroidal infection.

On account of the indolent adenopathy that accompanies balanitis erosiva, it must be differentiated from syphilis. In syphilis the period of incubation is longer, although the two infections may occur simultaneously, as reported in one of Scherber's cases, as well as in one of my own. When such a condition exists we may be compelled to defer our diagnosis of syphilis until the period of incubation for syphilis has elapsed; or in case of a mixed lesion the *Spirochaeta pallida* may easily be demonstrated by the dark-ground illuminator, and is so characteristic as to be easily differentiated from the spirochete of balanitis.

Herpes praeputialis always occurs as groups of small insignificant vesicles in which local reaction is mild or entirely absent. This condition simulates somewhat the mild form of balanitis erosiva, but in herpes one fails to find the organisms characteristic of balanitis.

TREATMENT

As a prophylactic measure, the practice of circumcision should be encouraged; it is absolutely impossible for balanitis to exist in a person who has been circumcised.

In many cases in which the condition is mild and the foreskin can easily be retracted, all that is necessary is a thorough cleansing; but in the mild ulcerative forms in which there is the slightest evidence of phimosis, a dorsal incision should be performed. As the organism of balanitis is anaerobic, this incision serves a twofold purpose—of admitting air and exposing the diseased parts for treatment.

The natural tendency in this disease is to burn all the sloughing ulcers, but such treatment subjects the patient to needless punishment. As said before, the organisms of the disease are anaerobic, and as hydrogen peroxid liberates oxygen when in contact with organic matter, it acts as a specific for this form of infection.

The ordinary 2 per cent. solution is sufficient, but in severe cases of gangrenous balanitis, 25 per cent. may be painted on the parts.

REPORT OF CASES

CASE 1.—Erosive type (Fig. 3), previously reported.[1]

History.—The patient, M. M. W., aged 40, married, denied all previous venereal history. After four days' incubation the patient noticed itching and burning around the glans penis. There were no constitutional symptoms. During the first week this continued as a mild balanitis. The patient was able to retract the foreskin. Treatment was neglected. At the end of the first week conditions suddenly became worse; the foreskin began to swell and the patient was unable to retract it. At this time he presented himself for examination.

Fig. 6.—Gangrenous type, Case 6. Appearance on examination.

Examination.—The general muscular development was good; there were no scars or evidence of previous venereal disease. The penis was swollen and edematous; the edema extended about half way up the shaft of the penis, giving it a pear shape. The skin over the glans portion was red and slightly injected. There was complete phimosis. Exuding from the opening was thin, yellowish-white pus, with a penetrating odor; in the pus a vibrio and a spirochete were found. There

was constant burning pain which was increased on the slightest pressure. There was no urinary pain. The dorsal lymph-cord was easily palpable; the inguinal nodes were enlarged but not tender. There was no fever.

Treatment.—With a small hand-syringe 2 per cent. hydrogen peroxid was injected every hour into the preputial sac. By the second day the foreskin could be retracted, showing numerous small ulcers with sloughing bases and sharp borders, involving the sulcus and the covered portion of the glans.

These healed rapidly under the above treatment.

CASE 2.—Erosive type, complicated by syphilitic infection.

History.—C. E., man, aged 19, single. No previous venereal disease; gives history of many exposures. Last exposure four days previous; unnatural relations. After six days of incubation, patient presented himself at my clinic at the Post-Graduate Hospital.

Examination.—Well-developed individual, general examination negative. Pulse and temperature normal. No enlargement of the lymph-nodes, profuse yellow discharge from the preputial opening. Moderate amount of phimosis present. Foreskin was retracted with little difficulty, showing numerous typical superficial erosive ulcers, both in the sulcus coronarius and on the glans penis. Complicating this, however, was a hard indurated erosive chancre seen just back of the corona on the patient's left side. The sulcus was filled with purulent discharge, as seen in Figure 4.

Here by examination with the dark-field illuminator it was possible to make a differential examination at once, for there were present the *Spirochaeta pallida*, the spirochete of erosive and gangrenous balanitis, and numerous vibrios. No other method could have given such prompt diagnostic technic.

Fig. 7.—Gangrenous type, Case 6. Appearance forty-eight hours later.

Treatment.—Two per cent. hydrogen peroxid and salvarsan with prompt resolution of erosive condition.

CASE 3.—Erosive type, more advanced stage.

History.—F. P. E., man, aged 21 years, single, private patient. No history of any previous venereal disease, incubation six weeks, at which time unnatural relations were held with the idea of avoiding exposure by the ordinary channels.

Examination.—Large corpulent individual, general examination negative. Pulse and temperature normal. Considerable phimosis present, penis slightly swollen. Extreme tenderness on examination. Foreskin was not retractable; patient stated that during the month previous there was a little itching behind the glans, but that twenty-four hours before presenting himself for examination it suddenly began to swell and was extremely painful on examination. Profuse stinking discharge. Dorsal lymph-cord was palpable, slight painless inguinal adenopathy present.

Operation.—Dorsal and ventral incisions were performed, showing both superficial and deep necrotic ulcers present at borders of glans and sulcus coronarius, as seen in Figure 5. Numerous vibrios and spirochetes were obtained from the necrotic ulcers.

Treatment.—Two per cent. hydrogen peroxid, thorough cleaning with hand-syringe every two hours; prompt recovery; unable to obtain second photograph. There is no doubt that

Fig. 8.—Gangrenous type, Case 6. Appearance five months after, showing small stump left.

this case would have gone on to gangrene had not prompt treatment been instituted.

CASE 4.—Erosive type.

History.—P. O. S., man, aged 26, history of previous gonorrhea. Unnatural relations were held thirty-six hours previously.

Examination.—Typical pear-shaped swelling of the penis, foreskin retracted. Whole of glans penis and sulcus coronarius covered with superficial ulcers, average size about the head of a pin, profuse purulent discharge, containing vibrios and spirochetes. Dorsal lymph-cord palpable; no adenopathy.

This patient was so slovenly and careless that after two days of marked improvement he discontinued treatment and had a recurrence with a later cure.

CASE 5.—Erosive type. Previously reported.

History.—The patient, M. W. M., aged 26, denied syphilis; had had a supposed chancroidal infection two years previously. Two weeks before presenting himself the patient had intercourse. After three or four days there was a little itching beneath the prepuce. At the end of six days he presented himself for examination.

Examination.—The temperature and pulse were normal. The general nutrition was good, and there were no signs of latent syphilis. There was a large indurated swelling of the penis. From the preputial orifice exuded a thin, yellowish-white, stinking discharge. This was examined for gonococci but none was present. There was phimosis, but it was not complete. With dilation, the little finger was gently passed between the foreskin and the glans. The whole covered portion of the

glans and the inner leaf of the foreskin were covered with small ulcers, having necrotic sloughing bases. Those on the inner leaf extended to the border of the preputial fold; by gently pulling back the foreskin the whole could be plainly seen. The dorsal lymph-cord could be plainly felt and the inguinal nodes were enlarged but not tender. There were no constitutional symptoms.

Treatment.—The patient was given a wash of hydrogen peroxid, full strength. As he did not return to the clinic, we presume that his condition was satisfactory.

CASE 6.—Gangrenous type, previously reported.[3]

History.—The patient, A. G. G., aged 43, denied all previous venereal history. He had had intercourse nine days previously, at this time, the patient said that the prostitute lubricated the labia with saliva. The following day the glans-portion began to swell; there were chilly sensations; no nausea or vomiting. Previous to this time the patient's glans penis was exposed between the preputial fold, and the foreskin could be retracted. On account of the rapid phimosis that developed this could not be accomplished later. The local symptoms increased rapidly; by the third day gangrene had set in.

Examination.—When the patient presented himself at the clinic he was well nourished; muscular development good. There was a slight septic intoxication. The entire preputial covering for a distance of 3 inches was one black, necrotic mass (Fig. 6). By gentle manipulation the necrotic mass could be drawn away and deep sloughing ulcers, with sharp borders, could be seen extending into the penis above the glans. There was considerable thin, slimy pus present, with an odor of necrotic tissue. Here we were able to find the organism in large numbers. The remaining portion of the penis was dark red and infiltrated, the edema extending to the root; the inguinal lymph-nodes were enlarged. The patient's temperature was 102; malaise was marked.

Treatment.—The patient was sent to the county hospital. Here the necrotic foreskin was cut away, and just above the glans-portion, at the site of the inner preputial fold, two deep ulcers could be seen. The glans-portion was necrotic. In forty-eight hours (Fig 7) the entire glans-portion, together with about 1½ inches of the shaft of the penis sloughed off, leaving a short stump (Fig. 8). The patient was treated with irrigations of potassium permanganate three times a day, but the organism had already invaded the deeper layers and gangrene was unavoidable.

In the summer of 1912 I was permitted to exhibit in my clinic, from Dr. Sullivan's service at the Post-Graduate Hospital, an extensive case of gangrenous balanitis with destruction of one-half of the shaft of the penis. This had previously been treated with aseptic dressings and no organisms were found at the time I saw the patient.

At the present writing there is a case of gangrenous balanitis in the service of Dr. Oliver Ormsby at the Cook County Hospital.

Since reading Scherber's last publication, I am positively convinced that the same condition may produce distinct pathologic lesions in the female. Only recently I had under observation a patient with distinct erosions on the inner border of the labia minora with profuse foul-smelling acrid discharge.

I was able to find only the vibrio, but prompt and permanent healing was effected by means of tampons applied daily of 2 per cent. hydrogen peroxid.

It must be borne in mind that erosive and gangrenous balanitis only represents different stages of development in the same infection and that prompt treatment may often save an unfortunate person from the destruction of the whole or part of the sexual organ.

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THE DIAGNOSIS AND TREATMENT OF SEBORRHEIC KERATOSES OF THE LIPS

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The subject of seborrhea of the lip and its relationship to epithelioma has been admirably covered in a recent paper by Montgomery[1] of San Francisco, who also calls attention to the fact that concomitant functional hepatic embarrassment, chronic indigestion and the long-continued use of certain articles of food, particularly those rich in milk-fat, all have a deleterious influence on the skins of persons who are naturally predisposed to seborrhea.

The diseases commonly affecting the lips are relatively few in number. If one excludes lupus vulgaris and lupus erythematosus, both of which are comparatively rare in this region, at any rate in America, only six or seven disorders remain to be considered. Of these, pseudocolloid of the lips (Fordyce's disease), cheilitis glandularis apostematosa, cheilitis exfoliativa (Stelwagon's disease), seborrheic keratosis and epithelioma are the ones most frequently encountered. Of the general infections, syphilis is the most important.

Fordyce's[2] disease is "a condition which is characterized by the appearance of whitish or yellowish, scanty or abundant, discrete, aggregated, and often practically coalescent milium-like bodies, occurring more especially on the inside of the mouth, laterally along the line of the teeth as far back as the last molar, and possibly somewhat less frequently on the vermilion or mucous and inner surface of the lips."[2] The disorder is harmless, gives rise to no subjective symptoms, and does not predispose to malignance; consequently its presence is rather of theoretical than of practical interest.

Cheilitis glandularis apostematosa, an affection first described by Volkmann[4] in 1870, is an adenomatous condition of the mucous glands of one or both lips, histologically distinguished by enormous dilatation and hypertrophy of the ducts, and a great increase in the amount of glandular tissue, and clinically characterized by the presence of the widely dilated orifices of the affected glands on the mucous surface of the lip, giving to the vermilion border a peculiar, sieve-like appearance.

Until quite recently the condition was thought to be an extremely rare one, but, like many other cutaneous disorders, it undoubtedly occurs much oftener than it is recognized. Aside from the slight deformity to which its presence may give rise, and the inconvenience experienced by the patient in getting rid of the copious mucous discharge which is usually present, the condition in itself is not a serious one. In a single instance—and I have examined fully a score of cases—there was a concomitant cancerous growth at the mucocutaneous juncture, near the corner of the mouth. The patient, a man under the care of my associate, Dr. Kanoky, had been troubled with seborrhea for many years, and the border of the lower lip presented not only a well-defined case of cheilitis glandularis apostematosa (two daughters also were affected with this disorder), but cheilitis exfoliativa

1. Montgomery, D. W.: Seborrhea of the Lower Lip and Its Relationship to Epithelioma, Jour. Cutan. Dis., February, 1913, p. 82. See also Montgomery, D. W., and Culver, G. D.: Influence of Milk-Fat on Skin, Jour. Cutan. Dis., June, 1912, p. 319.

2. Fordyce, J. A.: A Peculiar Affection of the Mucous Membrane of the Lips and Oral Cavity, Jour. Cutan. Dis., 1896, xiv, 413.

3. Stelwagon, H. W.: Diseases of the Skin, Philadelphia, 1910, p. 1164.

4. Volkmann: Virchows Arch. f. path. Anat., 1870, l, 142.

and a "degenerated" seborrheic keratosis as well. It is probable, however, that the epithelioma was a result of the seborrheic affection and not of the glandular one.

Cheilitis exfoliativa[5] is a chronic, low-grade inflammatory process involving the vermilion border and usually the contiguous mucous and cutaneous surfaces of one or both lips, with resulting gradual exfoliation of the superficial corneous layers. There is seldom if ever any visible liquid exudation, and there is no itching. Clinically and histologically the disorder resembles a localized seborrheic dermatitis.

Seborrheic keratoses are circumscribed, painless, brown-pigmented, warty growths which develop on senile skin or on skin which is undergoing changes similar to those occurring in old age. The lesions begin as brownish macules and develop quite slowly. In the course of a few months or years a roughened, scaly, brownish or yellowish plaque is formed, with a slightly infiltrated base. In the milder types the elevation is slight, and the fawn-colored epithelial covering is smooth and velvety to the touch. In the extreme cases, however, the firm, dry, horny scales are irregularly arranged over the surface of the lesion, giving to it an appearance almost verrucose. The plaques are oval or irregular in outline and vary in size from a tack-head to a silver quarter. The sites where these lesions occur most frequently are the face and the back, although other regions are occasionally affected. When occurring on the lip, the lesions are usually firmer, smoother and more horn-like than when they occur on other parts of the body, but the main clinical and histologic features are the same. Here as elsewhere the growths may be temporarily removed by the use of greasy applications, alone or combined with small percentages of salicylic acid or sulphur, but promptly recur unless the large capillary loops which supply the base of the lesion are obstructed or obliterated. If allowed to persist, a considerable proportion of seborrheic keratoses undergo degenerative changes and ultimately become malignant, the resulting epitheliomas commonly being of an indolent, slow-growing type.

The diagnosis of cancer of the lip, unless it be at an extremely early stage, is as a rule not difficult. Occurring in middle-aged or elderly persons, and frequently commencing as a slight abrasion or crack, in the course of a few weeks or months a small, tender, superficial ulcer with variable infiltration results. The surface of the lesion is reddish or granular, and covered with a thin layer of viscid mucus.

Occasionally the epithelioma is of the papillary variety, beginning primarily as a papillary or warty growth, or springing secondarily from a lesion of the superficial, abraded type. The resulting fissured, cauliflower-like mass is generally covered with a sticky, mucoid or purulent discharge, bleeds easily, and gives rise to considerable infiltration and swelling of the subjacent tissues. In both varieties the lymph-nodes are involved comparatively early, particularly if the lower lip is the one affected.

According to Pusey[6] statistics would indicate that the majority of cancers of the upper lip are of the rodent

Fig. 1.—A typical example of cheilitis glandularis apostematosa. The scar marks the site of a former sinus opening.

Fig. 2.—Advanced papillary epithelioma of lip which developed on the base of a former seborrheic keratosis. Inoperable.

Fig. 3.—Chancre of lower lip, four weeks' duration.

Fig. 4.—Chancre of upper lip, seven weeks' duration.

Fig. 5.—Cheilitis due to syphilis in the second stage. Corners of mouth fissured, mucous mucous lesions in buccal cavity.

Fig. 6.—Seborrheic keratosis of the lip, three years' duration. Cured by application of Roentgen rays and carbon dioxid snow (Case 1).

Fig. 7.—Seborrheic keratosis of the lip, seven years' duration (Case 2).

Fig. 8.—Seborrheic keratosis of the lip, ten years' duration. Cured by application of Roentgen rays and carbon dioxid snow (Case 3).

5. Stelwagon, H. W.: Jour. Cutan. Dis., 1900, p. 268; A Peculiar Eczematoid Eruption of the Lip Region, ibid., August, 1904, p. 351.

6. Pusey, W. A.: Epithelioma of the Lip, Jour. Cutan. Dis., February, 1913, p. 73.

ulcer type, while only about 1.5 or 2 per cent. of those occurring on the lower lip are basocellular. In Bloodgood's[7] series of 119 cases, less than 4 per cent of those developing on the lower lip were rodent ulcers. I have found it difficult to obtain pathologic material in these cases because of the patients' fear of the knife and cutaneous punch, but, judging from the clinical features, I should say that basocellular carcinoma attacks the lower lip more frequently than this. I realize, however, that an opinion based on macroscopic appearance alone has very little weight when opposed to such evidence as that presented by Bloodgood.

In epitheliomatosis of this region the lower lip is affected much oftener than the upper. Bloodgood's conclusions were based on the study of 106 lesions of the lower lip and 13 of the upper, and Borrmann's[8] on 74 of the lower and 6 of the upper.

The only condition due to syphilis that might be mistaken for a seborrheic keratosis is the chancre. The rapidity with which the luetic lesion develops, as well as the induration generally present, and the associated early involvement of the lymph-nodes, will usually serve to distinguish it. In passing, a word of warning regarding the snap-shot diagnosis of suspicious lesions in the buccal region by means of the microscope may not be out of place. When a man of Noguchi's[9] experience expresses doubt regarding his ability to identify positively the *Spirochaeta pallida* in specimens taken from the mouth, it would be well for less skilled laboratory workers to practice conservatism. The following cases of seborrheic keratosis of the lip have been under my care at various times during the past three years:

Fig. 9.—Seborrheic keratosis of the lip of about one year's duration (Case 5).

Fig. 10.—Superficial epithelioma of lip which developed on the base of a former seborrheic keratosis. Apparent cure following application of Roentgen rays and carbon dioxid snow (Case 6).

Fig. 11.—Epithelioma of lip which developed on the base of a seborrheic keratosis of fourteen years' duration (Case 7).

REPORT OF CASES

CASE 1.—J. G., male, married, farmer, aged 28, referred by Dr. E. E. Peterson of Nashua, Mo. The patient's health had always been fairly good, although he had been troubled with seborrhea of the face and scalp since his sixteenth year. He seldom drank milk, and ate butter sparingly, but was an inveterate chewer of tobacco. His teeth were in bad condition. The lesion on the lip was of three years' duration, and, the patient believed, had followed a slight injury. Only the left side of the lower lip was involved, and the growth was but slightly infiltrated. It cleared up promptly under treatment.

CASE 2.—I. G., male, married, banker, aged 59, referred by Dr. W. L. M. Witter of Milan, Mo. At various times during the preceding fifteen years the patient had suffered more or less from digestive disturbances, and particularly from catarrhal jaundice. Nearly all of his teeth had decayed, and had been removed and replaced by bridgework. He was a large, powerful man, and careless regarding both eating and drinking. He had used tobacco since boyhood. There were numerous seborrheic keratoses on the cheeks, forehead, nose and backs of both hands. The one which he desired removed was on the upper lip, near the right angle of the mouth, and had been present about seven years. The plaque promptly disappeared under treatment, but in the course of a few months a new one developed on an adjoining area. This one was also removed, but was likewise followed by a recurrence. During the past three years, a half dozen or more keratoses have been removed from the right side of the upper lip, but, despite most energetic treatment, new ones have invariably appeared. The degree of infiltration is very slight, and there has never been any ulceration or involvement of the lymph-nodes. The sites of the former lesions are at first smooth and burnished looking, but sooner or later the surface becomes rough and scaly, and a new lesion promptly develops unless treatment is instituted.

Naturally, the patient fears that a carcinoma will finally result, but as yet there is nothing to indicate it. In this case, as in Montgomery's first one, I feel quite sure that the disordered condition of the digestive tract has much to do with the recurrence of the growths.

CASE 3.—W. F., male, married, farmer, aged 47. This patient had had seborrhea of the face and scalp for many years. He had been a chewer of tobacco for over twenty years. His teeth began to decay early in life, and only a few sound ones remained. The lesion from which relief was sought occupied the middle two-thirds of the lower lip, and was about 1 cm. in width and 0.5 cm. in height. It had commenced as a purplish macule, ten years previously. At times practically all of the horny mass would become detached, leaving a rough verrucose base, but in the course of a few weeks the keratosis invariably returned. Under treatment recovery was prompt, and there was no sign of a recurrence when the patient was last seen, eleven months later.

CASE 4.—F. R. N., widower, retired farmer, aged 61, referred by Dr. V. L. Andrews of Stella, Neb. In this case the keratosis, which had been present for five years, was situated on the left side of the lower lip, and was almost a duplicate of the lesion in Case 1. This patient had worn artificial teeth for eleven years, and had smoked and chewed tobacco for more than thirty. There was a history of "dyspepsia" and "liver trouble" extending over nearly a quarter of a century. The lesion cleared up promptly under treatment, but there was a slight recurrence two months later. Since then the lip has been in good condition.

CASE 5.—J. R., cattleman, married, aged 41, referred by Dr. Daniel Ross of Denison, Tex. The keratosis was decidedly

7. Bloodgood, J. C.: The Surgical Treatment of Cutaneous Malignant Growths, THE JOURNAL A. M. A., Nov. 5, 1910, p. 1615.
8. Borrmann: Deutsch. Ztschr. f. Chir., 1905, lxxvi, 404.
9. Noguchi, H.: Identification of Spirochaeta pallida in Culture THE JOURNAL A. M. A., Oct. 5, 1912, p. 1236.

warty in character, the hypertrophied papillae bleeding profusely whenever the growth was curetted away. It was located at the mucocutaneous juncture, near the middle of the lower lip. There was but little infiltration, and no suggestion of epitheliomatosis. Recovery was fairly prompt under the usual line of treatment, and there had been no recurrence up to the time of the patient's death, from intestinal obstruction, almost a year later.

CASE 6.—G. W., engineer, married, aged 46, referred by Dr. T. J. Beattie of Kansas City, Mo. The patient was a large, fleshy German. His teeth were in very bad condition, the result of a long-standing case of pyorrhea alveolaris. He had used tobacco since boyhood. The lesion, which had commenced as a seborrheic keratosis five years before, was located near the middle of the lower lip, and was already epitheliomatous, as shown by the amount of infiltration present, and the ulcerated base of the growth. Recovery was apparently complete at the end of two months' treatment, and there are no signs of recurrence after more than a year has passed.

CASE 7.—L. J. B., retired farmer, married, aged 64, referred by Dr. Frank Herbst of Kansas City, Mo. The lesion on the lip had commenced as a seborrheic keratosis fourteen years previously. At the time of the first examination there was present a large keratosis at the mucocutaneous juncture on the right side of the lower lip. When the surplus epithelium was removed by means of a mild salicylic acid paste, the base was found to consist of an ulcerated, nodular mass, the size of an English walnut. The submaxillary lymph-nodes were not palpable. This patient had been in poor health for many years, and had been a tobacco-chewer since his thirtieth year. The growth did not respond favorably, or at any rate promptly, to treatment, and at the end of a month was referred to Dr. Jabez N. Jackson for operation.

TREATMENT

The line of treatment employed in these cases was in each instance the same, with the exception of Case 2. Each of the lesions received from seven to twenty Roentgen-ray exposures, a medium tube being used, at a distance of 15 cm. The treatments were of eight minutes' duration, and were repeated daily for one week. Finally the superabundant epithelium was removed by the aid of a 5 per cent. salicylic acid ointment, and the base of the lesion thoroughly frozen (for at least one minute, under heavy pressure) with Pusey's[10] carbon dioxid snow, care being taken to include not only the entire base but a margin of apparently healthy integument as well.

In Cases 1, 3, 4, 5 and 6 the results were all that could be desired. In Case 2 a large number of remedies and measures have been tried. Probably the greatest degree of benefit has resulted from the application of trichloracetic acid crystals, an exceedingly effectual agent first suggested by Davis of Philadelphia, and strongly recommended by Montgomery and Culver[11] for the removal of circumscribed patches of chronic seborrheic dermatitis. Despite the efforts of both Dr Witter and myself, however, the keratoses continue to form.[12] It is possible that the plan of treatment here outlined would have ultimately brought about a cure in Case 7, but under the circumstances I believe that the necessary delay would not have been justified.

10. Pusey, W. A.: Carbon Dioxid Snow in Treatment of Nevi and other Skin Lesions, THE JOURNAL A. M. A., Oct. 19, 1907, p. 1354.

11. Montgomery, D. W., and Culver, G. D.: Trichloracetic Acid as a Keratolytic in Seborrheic Keratosis, Jour. Cutan. Dis., September, 1912, p. 523.

12. April 19, 1913. Early in February this patient, who is an exceedingly intelligent, but rather "strong-minded" individual, concluded that he would reform in the matter of drinking and intemperate eating. Within less than a month the lip was well, and has remained so ever since. The credit for this gratifying result belongs to Dr. Witter, who supplied the necessary moral support.

CAUSES OF SEBORRHEIC KERATOSES

According to Pusey[13] the most essential factor in the production of seborrheic keratoses is a peculiar harsh, dry quality of the skin, occurring more particularly in florid individuals. The fact that several members of a family may be similarly affected would suggest that this condition, like ichthyosis, may occasionally be hereditary. Constant exposure to sunlight and wind is a contributory cause in many instances. In keratosis of the lip, however, it is exceedingly probable that neglect of the teeth, with ensuing disturbances of the digestive tract, and the irritation resulting from the long-continued use of tobacco, especially chewing tobacco, are important etiologic factors.

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THE EFFECTS OF ADRENAL MASSAGE ON BLOOD-PRESSURE

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In spite of considerable evidence to the contrary, the opinion widely prevails that adrenal secretion has exclusively a pressor effect on vascular tension. From time to time since Oliver and Schaefer first investigated the subject, different observers have reported that dilute solutions of adrenal extract cause a fall of arterial pressure; but this effect has been ascribed to general "depressants" which occur in almost any tissue extract. For instance, Moore and Purington reported in 1900 that extracts of adrenal glands from the ox when given in minute dosage cause in the dog a fall of pressure, but that when larger amounts are used the effect is a rise.[1]

More recently Elliott[2] has noted that stimulation of the splanchnic nerves in the cat results not only in augmented pressure due to vasoconstriction in the abdominal viscera, but also in a secondary fall of pressure due to liberation of epinephrin from the adrenals. This fall of pressure Elliott has designated the "paradoxical reaction." A similar effect was independently observed by Cannon and Nice.[3] Recently, continuing investigations along the same line, Cannon and Lyman[4] have conclusively proved that in the cat at least, when blood-pressure is at a normal height, injections of pure epinephrin in proper minute dosage and at the proper rate invariably produce a depression. This effect can be secured time after time. It was found, however, that the reaction varies diametrically depending on the existing degree of vascular tonus. If initial tension is low only an augmented pressure can be secured. Last year Hoskins and McClure[5] reported that in the dog also the effect of minute doses of epinephrin (adrenalin) is characteristically a fall of pressure; then as the dosage is increased the depressor is succeeded by a pressor effect. These observations, however, are open to the objections that the depressor influence might conceiv-

13. Pusey, W. A.: The Principles and Practice of Dermatology, Ed. 2, 1911, p. 737.

1. For a review of the earlier literature see Vincent, Internal Secretion and the Ductless Glands, London, 1912.

2. Elliott: Jour. Physiol., 1912, xliv, 374.

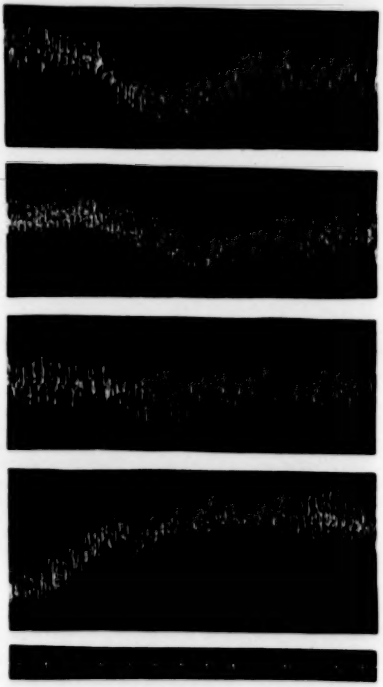
3. Cannon and Nice: Am. Jour. Physiol., 1912, xxix, p. xxiv.

4. Cannon and Lyman: Am. Jour. Physiol., 1912, xxxi, 376.

5. Hoskins, R. G., and McClure, C. W.: The Adrenal Glands and Blood-Pressure, Arch. Int. Med. October, 1912, p. 353.

ably be due to the preservative used in the drug, to impurities present or to disintegration products.

The question as to whether minute quantities of epinephrin do or do not have a pressor effect is one of considerable importance. The assumption that epinephrin circulating even in minute (physiologic) quantities does have a pressor influence is the basis of a widely held theory that an important function of the adrenals is to maintain a tonic activity in the vasomotor system, or, indeed, in the sympathetic system as a whole. So far as the cat is concerned the matter is now conclusively determined. Similarly conclusive evidence should be



Graduated series of effects obtained in the same dog by adrenal massage of varying degrees from light (top) to vigorous (bottom). Tracings from carotid artery. Mean blood-pressure 130 mm. Time, five seconds.

obtained as regards other animals. Von Anrep[6] has recently made some interesting observations on the effects of stimulating the splanchnic nerves in the dog. He noted that such stimulation causes a discharge of epinephrin which can be recognized by its constricting effect in the peripheral blood-vessels. Although he was familiar with Elliott's "paradoxical reaction" in the cat he apparently saw nothing comparable to it in the dog.

For these reasons we decided to investigate further in the dog the vascular reactions to adrenal stimulation, noting particularly the effects of varying the strength of stimulus. Our first plan was to apply electrodes to the splanchnic nerves directly after cutting them to prevent the effects of afferent impulses playing on the central nervous system. Our first results were unsatisfactory, apparently because there was little dischargeable epinephrin left in the glands after the necessary experimental manipulations. In the meanwhile Cannon and Lyman's paper appeared, showing that normal reactions could not be expected under the condition of low blood-pressure which results from cutting the splanchnic nerves.

It became necessary then to devise some way of stimulating the glands during conditions of normal pressure without at the same time unduly stimulating any of the intact contiguous nerve fibers. Stewart[7] has called attention to the fact that massage of the adrenals readily causes an augmented epinephrin secretion. We decided therefore to make use of this fact to secure adrenal discharge. Investigation showed that considerable care was necessary to avoid visceral irritation which in itself causes changes of blood-pressure. With careful manipulations, however, massage sufficient to affect the adrenals could be applied in the region of these glands without causing any significant influence on blood-pressure due to stimulating other structures. Any results from applying similar massage to the adrenals, therefore, can be ascribed to effects on the glands themselves.

As a matter of fact, another unexpected difficulty was encountered. It proved necessary to work very carefully to prevent a premature exhaustion of the available epinephrin. Influences known to be important in causing adrenal discharge are anesthesia, asphyxia, violent emotions and sensory stimulation. These all had to be reduced to a minimum to secure satisfactory results.

A dog of quiet temperament was in each instance selected. It was then handled gently and etherized with as little excitement or asphyxiation as possible. Then after it was strapped to an animal-holder, urethane was given by stomach-tube, about 2 gm. per kilogram, and the ether discontinued as the urethane became effective. A cannula was inserted into one of the carotid arteries and connected with a recording mercury manometer. An incision about 2 inches long was then made through the body wall in the region of each adrenal. Through these a finger or finger and thumb could be inserted and the adrenals carefully massaged. It was found necessary to use care to avoid traction on the mesentery or undue irritation of the viscera, either of which in themselves cause variations of blood-pressure.

The results secured confirm the observations of Hoskins and McClure on the effects of varying dosage of epinephrin. They ranged from marked depression with a small discharge to considerable rise of pressure when the glands were vigorously manipulated. In no case, however, was there secured a rise of pressure at all comparable to that following the ordinary therapeutic dosage of epinephrin or, indeed, of the magnitude expected.

The accompanying tracings show a graduated series of effects produced in the same dog by massaging one or the other of the adrenals, at first gently and then more and more vigorously until a maximal discharge was obtained. In the last instance figured the discharge continued for about four minutes after the massage had ceased.

Incidentally, it may be mentioned that we have had opportunity to extend Cannon and Lyman's observation

6. Von Anrep: Jour. Physiol., 1912, xiv, 318.

7. Stewart: Jour. Exper. Med. 1912, xv, 547.

on the effect of initial tension to include the dog. In a series of experiments starting with a mean blood-pressure of 120 mm., very dilute solutions of epinephrin gave a pronounced fall of pressure. When in the same dog, however, the initial tension was 40 mm., only purely pressor effects could be obtained.

The results herein reported as well as those of Cannon and Lyman add further support to the conclusion that adrenal secretion cannot be an immediate factor in normal blood-pressure. There can be little doubt that the injection or discharge of epinephrin in gradually increasing amounts will result first in an augmentation of any physiologic effect that normally circulating epinephrin might be producing. It follows, therefore, that since the first effect of such injection is depression the adrenals have normally either no immediate influence or else have a depressor effect on arterial tension. It is only when a distinctly abnormal quantity is used that a hypertension occurs. Strong support for the same conclusion is also derived from the fact reported by Hoskins and McClure[8] in 1912, that epinephrin injections bring intestinal peristalsis to a complete standstill in dosages inadequate to raise blood-pressure. A mechanism that could promote vascular tension only at the expense of intestinal stasis would be obviously futile.

An explanation of the well-known low blood-pressure that results in experimental adrenal deficiency or in melasma suprarenale (Addison's disease) is to be looked for, therefore, not in the failure of a normal tonic stimulant to the sympathetic nervous system, but probably in an interference with muscular metabolisms, including those of the heart and arteries.

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THE POSSIBLE RELATIONSHIP OF ORGANIC DISEASES OF THE NERVOUS SYSTEM TO RIGGS' DISEASE *

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The occurrence of purulent disease of the alveolar processes is so common and so wide-spread that it has come to be regarded, unfortunately, only as disagreeable and esthetically offensive, but not dangerous and capable of causing serious disease. I have had experience which convinces me that Riggs' disease may be the source from which serious organic diseases of the nervous system flow; although I can offer no other proof of the truth of this statement than the occurrence of such disease in persons afflicted with alveolar pyorrhea, the absence of other etiology and the amelioration or disappearance of the disorder after the pyorrhea has been treated locally and constitutionally by means of autogenous vaccine, I am constrained nevertheless to present a few of these observations for consideration. From a large number of cases in which I believe Riggs' disease played the chief rôle in the causation of the nervous trouble, I have selected three. In these the peripheral motor neurons bore the brunt of the disease.

The first case that I shall cite was one of universal myokymia. "Myokymia" is the name given to a disease of unknown origin the chief clinical manifestations of which are the occurrence of muscle waves and general weakness. It was first described by Kny[1] and by Schultze.[2] Its occurrence has been attributed to exhaustion, to exposure to cold, to trauma and to lead, but none of these has been proved to be causative of the disorder. That it is apparently a rare condition is shown by the fact that I have encountered but five instances of it in the examination of 10,000 patients. The course of the disease is extremely chronic, and in the absence of any cause which can be removed or overcome the treatment is most unsatisfactory.

Patient.—Merchant, aged 41, married, of good habits, habituated to cricket, golf and tennis, noticed in June, 1912, that his legs became tired and his gait feeble after comparatively slight effort, such as playing a round of golf or a set of tennis. These symptoms continued to increase rapidly and a month later he noticed that while playing cricket he could not focus properly; the ball would hit him instead of the bat. In the four months that intervened between the occurrence of his symptoms and the date when I first saw him, the easily induced fatigue, insecurity of station and gait and sensation of trembling in the muscles had increased to such an extent that he became nearly incapacitated for any work or pastime that required standing or walking. For instance, the day he came to see me he had to be assisted from the automobile into my house.

Examination.—The most conspicuous symptoms were: (1) constant wave-like movement in practically all the muscles of the body and of the limbs; (2) abnormal liveliness of all the tendon-jerks, including an exhaustible ankle-clonus but no Babinski or Oppenheim phenomena; (3) nystagmus when the eyeballs were in forced lateral position and paresis of the right external rectus muscle; (4) hyperidrosis; (5) increase of electric excitability of the muscles of the extremities; (6) tremor of the outstretched fingers and slight transient tremor of the lips. The myotatic irritability, however, was the striking symptom. As the patient lay quietly in bed the muscle waves could be seen extending from one end of his body to the other, short waves one following another in what seemed to be indolent succession. The most careful laboratory examination of his blood, spinal fluid, urine, gastric contents and feces showed no departure from normal. During the week that these examinations and observations were being made the patient was kept in bed and at the end of that time myokymia was much less striking and the patient said he felt quite well. He returned to his business, but in a few days he returned with complaints of his infirmity. It was then that the suspicion crossed my mind that an obvious and severe pyorrhea which he had might have some relation to the disease. A culture was made from pus about the gum of the wisdom tooth and this culture revealed Gram-positive coccus in short chains and pairs; Gram-negative coccus, unidentified few.

Treatment and Results.— Vaccine, *Streptococcus viridans*, strength 1 c.c., 500 millions. First dose 1/10 c.c., 50 millions; an injection given twice a week and increased by 1/10 c.c. or 50 millions.

Jan. 24, 1913: Vaccine, *Streptococcus viridans*, strength 1 c.c., 1,000 millions. First dose 1/10 c.c. 100 millions, a reduction from the last dose of 500 millions. The injections were given twice a week, increased by 1/10 c.c., 100 millions, up to 5/10 c.c. or 500 millions, and thereafter once a week up to 1,000 millions.

Meanwhile he was sent to a dentist for local treatment.

Two months after the treatment had been instituted he felt well, the muscle waves and weakness of the legs no longer annoyed him and he went daily to his business. He was not seen then until March 18, 1913, when a call came from his place of business saying that he had been suddenly taken seriously ill. When one of my assistants reached him he was told that the patient had been in excellent health up to the morning of that day. The day before he had walked two miles because he felt like walking and he was well enough to play a game of cricket. On the morning of March 18 he noticed at

8. Hoskins and McClure: Am. Jour. Physiol., 1912, xxxi, 59.

* Read before the Association of American Physicians, May 6, 1913.

1. Kny: Arch. f. Psych., xix.
2. Schultze: Ztschr. f. Neurol., vi.

11 o'clock that his feet were heavy. Gradually his legs and thighs became heavier and by 3 o'clock he found locomotion without support impossible. During this period he felt chilly and ill. At 3 o'clock he had several uncontrollable outbursts of sobbing without experiencing any subjective emotion, sobbing which seemed to the observer quite similar to that which one sees in patients who have thalamic disease.

He was at once brought into the hospital and the physical signs were, in addition to those which he had six months before, elevation of temperature to 101, pulse 100 and inability to stand and walk unaided. Again the laboratory investigation threw no light on this inexplicable accession of symptoms. He had the last injection of vaccine on March 16, 1913. A dentist was requested to remove two front teeth and from the cavity of one of them oozed a considerable amount of pus.

March 20, the following day, the temperature was normal, patient had slept well, and said he was much better.

March 21, patient was up walking around the room, shaved himself and was able to stand on either leg without aid. No headache had followed the lumbar puncture.

March 22, patient maintained that he felt quite well. The direct myotatic irritability of the muscles was much less than three days before. Tendon-jerks were still active, no evidence of any myokymia. From that day to this the patient has gone to his business daily. There is no evidence of muscular weakness or myokymia and he seems to be well. The vaccine administration was continued.

He who will not believe that there was a definite relationship between the pyorrhea alveolaris and this most enigmatic symptom-complex to which the name "myokymia" is given must be skeptical indeed.

The second case that I shall relate is a very complicated one and to accept the statement that all the patient's ill health was dependent on disease of the buccal cavity may tax your credulity as it does mine.

Patient.—A man now 58 years old, had been singularly free from illness until his fiftieth year. Then after months of most strenuous devotion to and successful effort in an international sporting event, he was stricken with a disease which was at first supposed to be a polyneuritis, but which was found eventually to be a chronic parenchymatous myositis. After a week of malaise the patient complained of heaviness in all his extremities. Pain in the muscles of the extremities and of the trunk increased by active or passive movements and gradually he became paralyzed and helpless, practically unable to move a limb. There was no swelling of the joints and no tenderness over nerve trunks, but the swelling of the muscles in the shoulder and upper arm and the thigh could be readily made out. None of the ordinary attributable causes of general myositis, acute infection or intoxication of any kind could be determined, nor did the blood reveal evidences of eosinophilia. In the absence of any attributable cause, it was thought it must be a manifestation of the gout. The patient had never had gout nor did his arteries or kidneys show any evidence of it. At the end of a year, during which time every resource, which a man of wealth could command, was resorted to, he gradually recovered. The muscles that were the seat of this disease in its most advanced form underwent an atrophy evidently the interstitial sequela of the parenchymatous process which after a long time was counteracted by exercise.

The patient remained well for three years; then without attribution of any kind he complained of malaise, headache, lack of energy and general depression. The upper lobe of his left lung revealed a general tuberculous infiltration. Two months later he had his first hemorrhage which was followed by most profound prostration and mental depression and both the physical examination and x-ray revealed the extensiveness of the tuberculous process. Bacilli were never very numerous in his sputum. He lost about 26 pounds in weight and had an elevated temperature for two months or over, but at the end of the year he was apparently well. Again he remained well for about three years.

One evening in September, 1912, after he had returned from the races in Paris, where he had subjected himself to some emotional strain, he complained of a strange fluttering in his chest, a sensation of uneasiness and state of apprehension without cause. At the end of a week's observation the Parisian physicians made the diagnosis of auricular fibrillation and put him on a course of treatment including digalen. At the end of a month he came home. The fibrillation which he had on his return, shown by the electrocardiograms made for me by Dr. W. B. James, was absolutely typical. He had a profound attack of prostration. He was kept in bed for five weeks, during which time most benefit was obtained from the administration of digipuratum, but the evidence of the fibrillation remained very conspicuous.

Physical Examination.—Heart revealed no valvular or detectable muscular disease. It was assumed, however, that the fibrillation of the auricles must have been the direct outcome of a chronic myocarditis, probably the result of a coronary arteriosclerosis, though no evidence of arteriosclerosis could be found in any part of the body, save for a diminution of the hydrochloric acid in the gastric juice. All laboratory examinations were negative.

Treatment.—The patient was kept in bed for four weeks and given digalen, for which later digipuratum was substituted. He felt some improvement but not much. The pulse-beat and the apex-beat became synchronous, however. His condition remained profoundly neurasthenic. Every second day he complained of stiffness of the joints of the hands and elbows, occasionally of the knees, and unattributable malaise, headache and depression. He reported that he found blood occasionally on his tooth-brush. Examination revealed an extremely mild pyorrhea from which a culture was made.

Dec. 17, 1912: Vaccine, *Streptococcus viridans*, strength 1 c.c., 500 millions. First dose was 1/10 c.c., 50 millions; injection given twice a week and increased by 1/10 c.c. or 50 millions.

Jan. 24, 1913: Vaccine, *Streptococcus viridans*, strength 1 c.c., 1,000 millions. First dose 1/10 c.c., 100 millions, a reduction from the last dose of 500 millions. Injections given twice a week, increased by 1/10 c.c., 100 millions, up to 5/10 c.c. or 500 millions, and thereafter once a week up to 1,000 millions.

Feb. 26, 1913: Vaccine, *Streptococcus viridans*, strength 1 c.c., 1,625 millions. First dose 5/10 c.c., 812 millions, a reduction from the last dose of 1,000 millions. Injections given once a week and increased by 1/10 c.c., 162 millions, for five doses and followed by three doses of 1 c.c., 1,625 millions, once a week.

Results.—From the time when the evidences of the local disorder disappeared under topical treatment and he had received ten vaccinations, the patient began to improve. Now he rides, walks, plays golf in moderation and comports himself like a normal man. An electrocardiogram made a few days ago shows the fibrillation of the auricle still in existence. The relation of the disease which this man has had to Riggs' disease, I do not know; but I do know that he seems to have recovered after the Riggs' disease had been overcome. It is worthy of note that the gastric juice now contains hydrochloric acid in normal amount.

The third case that I shall relate as an example of organic disease of the nervous system following in the wake of a condition caused by purulent gingivitis is one of multiple neuritis, which made an unimpeded progress to death.

Patient.—Farmer, aged 60, complained of pain and soreness in the lower extremities, of a sensation of drawing, of tightness in the feet and legs, of enfeeblement in the lower extremities, of rapid fatigue on exercise and of general weakness. These symptoms he thought had come on two years before I saw him, that is, in the summer of 1909, but on inquiry he admitted that he had not been well for eight or ten years. It was as long ago as that when he noticed that he could not do as much work as he formerly could do, that he became fatigued easily and that he often had pain in the back. He thought this was due to a slight attack of rheumatism which he had twenty years ago. Three years before

coming under observation he had had several attacks of pain over the sternum; dull, heavy, deep pain, the intensity of which increased for about an hour, then gradually wore away. It had no relation to taking food nor was it affected by antirheumatic medicines.

In May, 1911, he complained of a sensation of constriction in the bottom of feet and toes and of increased sensitiveness of the toes. When he moved the toes they felt like a rubber ball. During the summer, weakness of the feet and legs developed and he was unable to go to his farm. In the early autumn he first noticed that he could not clear the toes in walking and this increased until complete foot-drop developed. The next symptom, aside from sexual impotency, which was an early symptom, was atrophy of the lower extremities and general emaciation.

Examination.—When I saw him early in 1912, he had the typical objective symptoms of multiple neuritis, that is, tenderness over the nerve trunks, symmetrical muscular atrophy, loss of the tendon-jerks, reaction of degeneration in the affected nerves and muscles and objective sensory disturbance nonsegmental in distribution, hyperesthetic in some areas, hypesthetic in others.

Examination of the blood on various occasions showed a mild degree of secondary anemia, and with a considerable number of leukocytes, but with no increase in the number of lymphocytes. For instance, Jan. 1, 1912, the blood showed hemoglobin 89 per cent.; red blood-cells 4,882,000; white blood-cells 19,000; differential count: neutrophils 76 per cent.; eosinophils 1 per cent.; basophils none; large lymphocytes 7; small lymphocytes 12; mononuclears none; transitional 4 per cent. The red blood-cells showed a mild polychromatophilia.

The cerebrospinal fluid analysis showed negative Wassermann, positive globulin content, no cells and the cerebrospinal fluid reduced Fehling's solution. The serum Wassermann was negative.

Analysis of the stomach contents showed a decided subacidity; total 10/40, no free hydrochloric acid, normal pepsin content and no lactic acid. Gross, chemical and microscopic examination of the stools showed no abnormality. The same was true of the urine save that there was constantly an excess of indican and occasionally a trace of urobilinogen. The pulse and temperature chart shows that each day there was an elevation of temperature in the afternoon, always as high as 100 degrees mouth temperature, and here and there 100.5 to 101 degrees. The morning temperature was approximately normal. The pulse kept pace with the temperature. In the morning it averaged from 78 to 85, in the afternoon 90 to 100.

The slight febrile state and the blood-picture were the only suggestions of a possible infectious origin of the disease, but the source of this infection, a profound purulent gingivitis, was not suspected until the patient was seen again.

Treatment and Result.—During several weeks he was subjected to general restorative treatment: massage, electricity, packs, injections of strychnin, etc. He made no progress under such treatment and a dentist was then called. Many pus pockets were opened and surgical treatment of the disease begun. Unfortunately no cultures were made. The patient could not be persuaded that this had anything to do with his total incapacity and he insisted on going home, where he died six months later, the disease, it is reported by his physician, having made steady progress.

A great many cases quite as striking as these could be cited. I am of the opinion that the neuromuscular system is most vulnerable, after the joints, to the *Streptococcus viridans*. That a very considerable number of the cases of the chronic arthritides are of bacterial origin there can be, I think, little doubt. In a recent article, Dr. T. W. Hastings[3] quotes the histories of six cases of arthritis deformans of from two to fifteen years' duration which reacted to strains of *Streptococcus viridans*. From four of these cases the same organism was isolated from a tooth-socket after extraction of the tooth. Improvement resulted from injections of vaccines.

The time has apparently come when it is incumbent on us to treat seriously what has seemed to be only an offensive disorder, and to institute early measures that will prevent a systemic infection which may become far reaching and extremely serious.

37 West Fifty-Fourth Street.

3. Hastings, T. W.: Complement-Fixation Tests for Streptococcus, Gonococcus and other Bacteria in Infective Deforming Arthritis and Arthritis Deformans, THE JOURNAL A. M. A., April 19, 1913, p. 1208.

A SPIROCHETE ASSOCIATED WITH INFECTIONS OF THE ACCESSORY SINUSES*

RUTH TUNNICLIFF, M.D.
CHICAGO

In examining smears from the noses of patients with acute rhinitis, a spirochete, staining deeply with carbol-gentian-violet, was observed in five cases. In four of the cases it was found in connection with infections of the accessory sinuses. In the other cases no history could be obtained except that of a severe acute rhinitis. The spirochete has two or three curves, the ends being pointed and parallel to the long axis; it measures from 2½ to 5 microns in length and ½ micron in width; it is anaerobic and was isolated in pure culture on alkaline goat-blood agar. The growth appeared on the surface after seven days incubation as a dull radiating growth; later it appeared also in the fluid of condensation.

In subcultures it formed raised pin-point colonies near the fluid of condensation, the rest of the growth being dull and rather profuse. The growth in the first culture was mucoid but it lost this characteristic after being transplanted several times. There was no odor from the cultures. The organism also grew in ascites and dextrose agar but produced no change in the mediums. In cultures the organisms may show as many as four curves and are apt to be irregular in shape, often staining irregularly. Oval, round, only slightly curved bacillary forms are seen. Deeply staining bodies and rings may be attached to the ends, and with the Giemsa stain two or three red-stained bodies are brought out inside the spirochete. The spirochetes show evidence of transverse division. The organism is commonly motile, having a darting-forward movement and some rotary motion; the refractile bodies present are also actively motile. It possesses many flagella on its ends and sides; the free round bodies also appear to possess flagella. After growing about seven days the spirochete disintegrates suddenly, leaving many poorly stained bodies as a result. It is not pathogenic when injected into the nose of a dog.

The significance of this spirochete is yet to be determined.

1743 West Harrison Street.

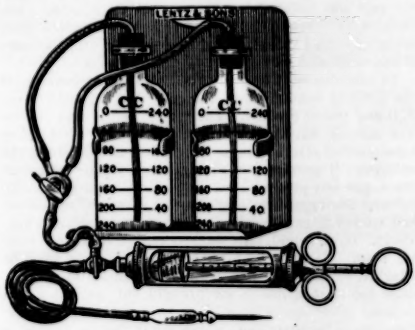
*A Preliminary Report from the Memorial Institute for Infectious Diseases.

Degeneracy and Errors of Refraction.—While extreme moral degeneracy traceable to errors of refraction is without question very rare, we have all met numerous instances in which a child's irritability, perverseness and apparently pure "cussedness" have been set aside by the wearing of glasses. A boy with squint will find his deformity the object of the taunts and ridicule of his schoolmates, and according to his temperament it will tend either to make him shy and sensitive or, if he be aggressive, resentful and pugnacious. The effect of such a defect on a girl is almost certain to make her shy and irresponsive, and may profoundly influence her whole life.—W. Zentmayer in *Ann. Ophth.*

NEW AND SIMPLE APPARATUS FOR SALVARSAN ADMINISTRATION *

G. FRENCH S. CARY, M.D., BALTIMORE

The apparatus consists of two glass bottles graduated up to 240 c.c. in units of 40 c.c. each; one 50 c.c. glass and metal syringe fitted with a mineral-wool-packed plunger; one two-way stop-cock which is fitted to the end of the syringe; one two-way Y stop-cock which controls the fluid coming from each of the bottles; four pieces of rubber tubing and two rubber stoppers; and a specially made needle with a slip-on joint which fits a small glass handle which has one end ground to fit the needle. A simple aluminum stand with clips to hold the bottles completes the outfit. The whole apparatus may be placed in a sterilizer and boiled, and is so compact that it can be carried easily in one's grip if necessary. The salvarsan or neosalvarsan solution may be made directly in either one of the graduated bottles, thus saving the use of extra glassware, such as graduates, pipets, mixing flasks, etc. The aluminum stand allows change of position of the apparatus during the administration of the drug, which is often necessary. The slip-on needle does away with washers, and allows the operator to expel all the air from his tube after the needle has been introduced into the vein, while the glass handle acts as a guide for the operator; as blood will appear in this handle as soon as the needle



Syringe for injection of salvarsan. Glass handle guides operator. Two bottles enable alternate use of drug or water.

is in the lumen of the vein. One of the bottles may be used for either sterile water or saline solution, thus enabling the operator to wash out the vein before, during or after the injection of the drug.

SUMMARY

The advantages that suggested themselves to me in working with this apparatus are as follows:

1. The glass handle fitted with a slip-on needle is of great advantage because just as soon as the needle has properly entered the vein the blood will flow back into the glass handle, which saves the injection of fluid into the tissues until the operator is certain he is in the vein.

2. Since the salvarsan and distilled water are in separate bottles, both connected directly with the syringe and controlled by a two-way Y stop-cock, the operator can use solution from either bottle at will.

3. The fact that the bottles are graduated in units of 40 c.c. each permits the drug to be mixed in the bottle, as each unit of 40 c.c. of water is sufficient for 0.1 gm. of salvarsan.

4. The compactness of the apparatus makes it possible to carry it in a small space.

410 Professional Building.

* From the Genito-Urinary Clinic of the Johns Hopkins Hospital, Baltimore.

RETROPERITONEAL RUPTURE OF THE APPENDIX WITH EXTRAVASATION OF PUS INTO AND GANGRENE OF THE ENTIRE THIGH

JACOB R. BUCHBINDER, M.D., CHICAGO

I wish to present the following report not so much because of the diagnostic interest attached as because of pathologic findings of rather unusual rarity and variety.

Patient.—Mary R., negress, aged 21, entered the service of Dr. F. A. Besley in Cook County Hospital, Feb. 22, 1913. No history could be obtained, at the time of admission, because of the altered mentality of the patient, who was brought in by the police, unaccompanied. The following facts were obtained twenty hours later from a relative.

History.—Ten days before admission the patient had been seized with a sudden severe attack of abdominal pain, confined to the right side. She became nauseated and vomited repeatedly for twenty-four hours. The pain persisted, the nausea ceased at this time, and two physicians who then saw the case made a diagnosis of acute appendicitis. Five days later when the abdominal pain had lessened in severity, and the patient felt well enough to leave her bed, she was seized with severe pain in the right thigh, accompanied by repeated chills and a feeling of feverishness. On the following day considerable swelling of the thigh was noticed, and became progressively greater until admission to the hospital. In the past she had always been in good health; no pregnancies.

Examination on Admission.—The patient was a young negress of large stature and well-developed musculature; intensely septic-looking. The body was covered with fine drops of perspiration; respirations very rapid and shallow. The pupils were widely dilated and reactionless, the eyes presenting a peculiar stare, while the mental condition was that of alternating stupor and a low muttering delirium.

Chest: Lungs entirely negative. Heart rate rapid, but otherwise negative.

Abdomen: Moderately distended and tympanitic; rigidity moderate and apparently equal on both sides. Palpation in lower right quadrant aroused patient and caused her to cry out. In no other way (save that mentioned below) could a response be obtained.

Extremities: The right thigh was enormously swollen from hip to knee. The skin, smooth, tense and glossy, indented on digital pressure. The knee-joint was distended with fluid. The entire thigh was exquisitely tender, and touching any part of it caused the patient to cry out. Tendon reflexes were barely present.

Vaginal Examination: Cervix hard and freely movable; fundus retroverted. No other palpatory findings.

Rectal Examination: Negative. A colonic flushing given at this time resulted in a small amount of flatus.

Temperature: On admission 97.6; rose steadily to 103.6 during the next twenty-four hours.

Pulse: At first 120, very weak and snappy; in the course of from twelve to sixteen hours became imperceptible at the wrist.

Respirations: On admission 32; in a few hours hovered between 50 and 80.

Laboratory Findings: Leukocytes 15,000; polymorphonucleears 94 per cent. Urine showed a faint ring of albumin; nothing else.

By the time a history and consent for operation could be obtained, the condition of the patient excluded such procedure. Death occurred twenty-nine hours after admission.

Necropsy.—On opening the abdominal cavity the following conditions presented:

The small bowel was moderately distended with gas; the visceral peritoneum lusterless. There were no adhesions, no fluid nor other exudate in the general peritoneal cavity. The parietal peritoneum presented its normal luster. The edge of the liver projected just below the costal border. In exerting slight traction on the cecum in order to bring it into view,

several ounces of thin yellow pus welled up beneath the cecum, and between it and the abdominal wall. There were no adhesions between the latter and cecum.

Without further disturbing relations, the small bowel was crowded away, and the following unique picture presented:

The appendix, retrocecal, had become adherent by its tip to the posterior portion of the parietal peritoneum about on a level with the head of the cecum. It was much thickened and markedly inflamed along its entire length, and the tip had become gangrenous and sloughed off. An opening the size of a dime was present at this point in the peritoneum, the edges of which were ragged and sloughing, and into this the appendix dipped, discharging its contents retroperitoneally.

When the peritoneum was opened along the inner border of the cecum and the ascending colon, a large retroperitoneal pocket extending as high as the lower pole of the right kidney was found. This contained pus, fecal concretions and sloughing tissues. The ascending colon was negative The same pocket was then exposed in a downward direction behind the pelvic peritoneum. Here it was found that the pus, flowing over the iliac muscle, had extended into the thigh beneath Poupart's ligament through a kind of necrotic trough in the muscle, just external to the anterior crural nerve.

The incision started on the abdomen was carried down the right thigh, well below the knee. Pus in great quantities poured from the incision, which extended to the deep fascia. All of the superficial muscles anteriorly, laterally and two or three of the deeper ones posteriorly, were necrotic, a dirty grayish-brown color and of the consistency of butter. The finger could readily be pushed through them. The muscles closer to the femur were unaffected except for edema; in several places, however, the pus had begun to seep along fascial plains to deeper structures.

The periarticular structures of the knee were almost liquefied, and from there extension upward into the fatty subcutaneous tissues had occurred. The knee-joint was filled with a clear serous fluid. The hip-joint was unaffected. Neither femur nor tibia showed any changes externally or, in the medullary canal. No evidence of embolus or thrombus could be found in artery or vein. The pelvic viscera were normal in every respect. The heart showed swelling and pericardial hemorrhages. Other viscera showed nothing of consequence. The causative organism was a colon bacillus.

TORSION OF THE SPERMATIC CORD

ISRAEL KLEINER, M.D., NEW HAVEN, CONN.

Torsion of the spermatic cord, a fairly rare condition, was first described by Delasiauve in 1840. Scudder in 1901 published the report of a case[1] and reviewed the thirty-one other cases that had been reported in the literature up to that time. No doubt many cases have been reported since but I have been able to find the records of only fifty-four cases, most of them in the foreign literature. Many cases are probably overlooked as the patients recover spontaneously, and some are probably operated on for strangulated inguinal hernia, as were the patients in some of the reported cases. The rarity of the condition and the difficulty of differentiating it, in diagnosis, from strangulated inguinal hernia lead me to report the following case.

Patient.—H. H., boy, aged 15, was seen March 21, 1912, at 4 p. m. He complained of severe pains in the right groin, which began at 3 p. m. He had shoveled a heavy snow from the sidewalk at 1 p. m.; went to school as usual and felt well. He was called on to recite at 3 p. m.; had his foot twisted behind his chair and in attempting to arise was seized with a sudden severe sickening pain in the right groin. Patient said he felt all gone. He could not move his right leg without causing excruciating pain; had to be carried to a carriage and taken home. He had eaten nothing unusual that day. Bowels had moved well day before. There was no history of injury and no trouble with urination. He had always been well. He had had enlarged cervical lymphnodes several years ago. Two slight attacks of appendicitis three years ago. Family history was negative.

Examination.—(4 p. m.).—Well-developed boy, in bed apparently in severe pain. Temperature 99.6; pulse 110. Right leg drawn up; severe pain caused by motion of leg. Heart, lungs and abdomen negative. Inguinal canal, in its lower third, extremely tender. The right testicle cord and scrotum so tender that examination was impossible. No impulse on coughing. Introducing the finger into the right external abdominal ring caused severe pain but did not reveal any hernia. No apparent swelling of the testicle or cord, although examination was unsatisfactory. Rectal examination negative except for large amount of feces in rectum. No urethral discharge.

Treatment and Results.—An enema was ordered and hot application of lead and opium wash applied to the scrotum. Scrotum was swung in an adhesive hammock. At 8 p. m., five hours after onset, patient was comfortable. He suffered no pain except when he attempted to move. Examination showed the right epididymis and testicle swollen to about twice the size of the left, cord also considerably swollen, both very tender, epididymis and testicle in proper relation to the other parts. The testicle was fully descended. Treatment was continued as before. On the following day examination showed the same condition: patient comfortable except when testicle was handled; very tender to touch. Two days later swelling had disappeared, but tenderness still persisted. Patient returned to school the following day.

Five months later, August 23, patient had a similar attack. He was sitting at a table playing cards when on shifting his position he was seized with the same sort of pain. Another physician attended him that evening. I saw him the following morning and he presented the same condition as previously described. This, however, cleared up entirely the following day and the boy was about playing as usual.

On examination since, the boy shows no abnormality of the testicle except for a slight varicocele on the left side. There does not appear to be any atrophy.

I believe this to be a case of true torsion of the spermatic cord, one in which the twist became untwisted in both attacks before any permanent damage was done to the testicle.

193 York Street.

1 Scudder, C. L.: Strangulation of the Testis by Torsion of the Cord, Ann. Surg., 1901, xxxiv, 234.

INCONTINENCE OF FECES (NON-ORGANIC)

L. H. ZEUCH, M.D., CHICAGO

Incontinence of feces analogous to incontinence of urine, the origin of which can be traced to neuroses, general anemia or local parasites, is quite rare, judging from a review of the literature. In this disorder there is a relaxation of the sphincter ani, but not a paralysis. The muscle fibers respond to stimulation and are controlled at will, but formed stools pass through without the knowledge of the individual, as often as five or six times a day. No amount of moral suasion will control the disagreeable evacuations. Vegetable astringents, taken internally, are of no avail. Ergot, strychnin and hematic tonics have given success in the hands of others, but not until weeks have elapsed. To the list of reported cases I wish to add one occurring in my practice.

Case A. H., aged 8, whose father was a dipsomaniac, and mother very neurotic, had good control of the sphincters early in childhood. Last year he developed an acute nephritis, with general anasarca, which subsided on the administration of diuretics and other eliminative measures. After convalescence the mother noticed that he had lost control of the sphincter following a diarrhea. I was then consulted and prescribed vegetable astringents such as kino, krameria, gambir and others. The diarrhea stopped, but the incontinence of formed stools persisted. Night as well as daytime evacua-

tions occurred to the number of from five to eight a day. I again tried tonics and bromids, but no results followed. The parents first used punishment and then bribery, but without avail.

After six months I examined him thoroughly, but found nothing to which I could attribute the difficulty. His voluntary control of the sphincter ani was practically normal. There was no evidence of seatworms, or prolapse of the mucous membrane. Except for a slight relaxation of the sphincter, everything seemed to be normal. Thinking seatworms a possible etiologic factor, I injected a solution of mercuric chlorid 1:10,000 high into the rectum with a pump syringe. He held a pint of this solution fully ten minutes and then had a copious evacuation of formed stools. Internally I prescribed 10-minim doses of fluidextract of ergot every four hours. Since that day, now a period of more than nine months, he has had control of his feces.

While it would not be wise to draw conclusions from the results of treatment of one case, I wish to suggest the use of 1:10,000 solution of mercuric chlorid. I have had no ill effects from this solution in the treatment of seatworms and intolerable itching of the anus.

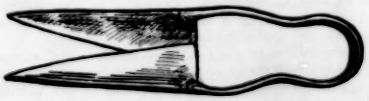
The result in my case was not due to the internal treatment, for the evacuations ceased before the ergot and tonics had had time to act, although they may have had a beneficial effect on the muscles, preventing recurrence.

3014 Fullerton Avenue.

MODIFIED SHEEP-SHEARS USEFUL IN SURGERY

EDWIN M. JONES, M.D., Miami, Fla.

The model photographed here was made up by an inexperienced man, who, being a blacksmith, used only hammer, anvil and file, but it serves the purpose. The advantages of these shears are that they are easily differentiated from other instruments on the table; can be used with the left



Modified sheep-shears useful in surgery.

hand as well as the right; they are always ready to cut, being open and not difficult to grasp. They are especially useful in cutting sutures, thin tissues and dissecting.

If taken up by an experienced instrument maker and modified somewhat, I believe that this very simple instrument will prove itself valuable.

909 Avenue C.

ANOTHER CASE OF SPOROTRICHIAL INFECTION IN MAN

G. S. ADAMS, M.D., YANKTON, S. DAK.

A wide-spread and growing interest in the subject of sporotrichosis during the last three years, particularly in the middle West, is evident from the increasing number of cases of this infection that are being recognized and reported. There can be little doubt that when the nature of this infection is more fully understood by the general practitioner a large number of cases of refractory skin lesions, now diagnosed as tuberculous or syphilitic in origin, will be recognized and treated as sporotrichosis.

The following more or less typical example of the infection very well illustrates this fact. The physician who first saw the case had in mind tuberculosis or syphilis. The improvement following the administration of potassium iodid rather strengthened the latter diagnosis, but on account of the negative history, family and personal, the case remained a puzzler.

For the history of the case I am indebted to Dr. J. P. Isaac, of Freeman, S. Dak., who presented the case for diagnosis at a meeting of the Eighth District Medical Society, Dec. 31, 1912.

Patient.—Miss S. W., a farmer's daughter, aged 18, a native and resident of Hutchinson County, S. Dak., lived in North Dakota the greater part of the first twelve years of her life, but the last six have been spent mostly in South Dakota.

She had not been away from home for some time previous to the beginning of the present trouble. Cutaneous history of the family is negative. There is no history of any preceding trauma. Patient first noticed a chain of small tumors on the extensor surface of the left forearm Nov. 1, 1912. When first seen by her physician, Nov. 28, 1912, there was an ulcer half an inch in diameter in the middle third of left forearm and a chain of small tumors extending to the elbow. The ulcer had a punched-out appearance, the border of the skin dark violaceous in color, infiltrated and undermined. The tumors were boggy, the overlying skin discolored, and a little seropus exuded when they were opened.

Patient was put on potassium iodid Dec. 21, 1912, before a diagnosis was made. One of the small tumors, which had broken down, was aspirated Dec. 31, 1912, by Drs. F. V. Willhite and E. V. Eyman of the State Hospital at Yankton, and several culture tubes inoculated. Jan. 6, 1913, the *Sporothrix schenckii* was recovered in pure culture from one of the tubes.

The iodid treatment began Dec. 21, 1912. The lesions were entirely healed by the end of January, 1913.

Special Articles

REPORT ON POST-MORTEM EXAMINATIONS IN THE UNITED STATES

BY THE PUBLIC HEALTH, HOSPITAL AND BUDGET COMMITTEE* OF THE NEW YORK ACADEMY OF MEDICINE†

I. THE PAST AND PRESENT POSITION OF THE AUTOPSY IN MEDICAL EDUCATION AND PRACTICE
HORST OERTEL, M.D., New York, Director of the Russell Sage Institute of Pathology.

II. STATISTICS OF POST-MORTEMS IN LARGE HOSPITALS OF THE UNITED STATES AND ABROAD
E. H. LEWINSKI-CORWIN, PH.D., New York, Executive Secretary of the Public Health, Hospital and Budget Committee of the New York Academy of Medicine.

III. SUMMARY OF THE REPORT; RECOMMENDATIONS

I. THE PAST AND PRESENT POSITION OF THE AUTOPSY IN MEDICAL EDUCATION AND PRACTICE

HORST OERTEL, M.D., NEW YORK
Director of the Russell Sage Institute of Pathology

HISTORICAL

It is an interesting observation to the student of the history of medicine that the development of scientific medicine and therapy in any country and among all nations has been inaugurated by the systematic performance of post-mortem examinations which made possible the establishment of pathologic anatomy. Its neglect has invariably been attended by stagnation and scientific decay.

*MEMBERS OF THE PUBLIC HEALTH, HOSPITAL AND BUDGET COMMITTEE OF THE NEW YORK ACADEMY OF MEDICINE:

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Thomas W. Hastings, M.D.	W. Gilman Thompson, M.D.
L. Emmett Holt, M.D.	Philip Van Ingen, M.D.
	Linsly R. Williams, M.D.

† Report approved by the Council of the Academy.

As in the rejuvenation of literature and arts, we owe to Italy the first decisive step in this direction. Preceded by the two Fantonis, it was essentially the merit of Morgagni (1767) to correlate the changes found in the body after death with the symptoms of disease. By post-mortem examinations he traced the underlying cause and seat of diseases; he localized diseased processes and furnished for the physicians of his times an objective idea of disease. In order fully to appreciate the magnitude of this work it must be remembered that before Morgagni's time ideas about the nature of diseases had been almost entirely imaginary and based only on very superficial knowledge of symptoms. Much was still unknown of the normal structure of the body, dissections of the human body had been rarely done and pathologic anatomy had consisted in a collection and description mainly of monstrosities and curiosities. Perhaps Morgagni's greatest accomplishment, therefore, was the consideration of usual and unusual evidence with equal scientific skill and criticism. This enabled him to arrive at much clearer ideas of the organic changes underlying the symptoms of diseases than had previously been possible. Morgagni's creation is therefore not strictly a system of pathology in the later and modern sense, but rather, as Haeser expresses it, a pathologic-anatomic explanation of symptomatology.

The second great step in this direction was made by Bichat in France (1771-1802), the founder of general anatomy. (It is reported that Bichat actually lived in the dissecting-room. In one winter he conducted personally 600 dissections—a very large number for that time. It undermined his health and caused his early death.) His work formed the direct foundation for the great French advance in medicine during the first thirty years of the nineteenth century. His influence is particularly noticeable in the works of the two great physicians of that time, Corvisart and Laennec. Bichat taught:

1. The body consists of general tissues which occur in all organs and in special tissues which are characteristic of an organ or "system" as he termed it.
2. Every tissue of the body may become diseased within itself.
3. All changes which constitute a disease of a tissue are essentially similar in character in all organs which contain this tissue.
4. Symptoms which occur during disease of organs in the body depend on changes in their respective tissues.
5. Sympathetic action is not so much the result of a relation of organs as it is evidence of relation of tissues.

These views opened an entirely new line of thought, for they were based on sound observation. Corvisart and Laennec, thus influenced, were able to make a considerable step forward of Morgagni. He had established the seat of diseases. But Corvisart and Laennec, standing on Bichat's shoulders, regarded pathologic anatomy as means to arrive at the *development* of diseases and therefore saw in it the underlying foundation of physical diagnosis. Thus the way was paved for the introduction and development of percussion and auscultation by Corvisart (1808) and Laennec (1815-19) and the revival and augmentation of Auenbrugger's work on percussion, which through ignorance and neglect had remained hidden for fifty years. Corvisart resurrected and enlarged it. Thus Bichat's work assumed an importance in the development of medicine which may justly be compared to the discovery of the circulation of the blood by Harvey.

A similar picture is presented somewhat later in Vienna. It is the work of one man, Rokitansky (1804-1878), professor of pathologic anatomy at the University of Vienna. Rokitansky possessed unusual industry and technic, coupled with excellent judgment and power of observation. He, as the first, regarded the anatomic changes in the organs as expressions of a *genetic* development of a disease. Rokitansky, therefore, endeavored to trace the character and relationship of processes of disease and laid the cornerstone of modern general pathology and particularly pathologic histology, that is, the microscopic investigation of diseased tissues. He emphasized in his farewell address that pathologic anatomy is the solid foundation of pathologic physiology, that is, the study of diseased functions, and of clinical medicine.

Thus Rokitansky became the founder of a school of medicine which soon was to be famous the world over as one offering the best opportunity to study the relation of symptoms to the organic changes in the body. Vienna became a veritable Mecca for the education of thousands of physicians from all parts of the world until a rival arose in Germany, which under the influence of the greatest pathologic anatomist went further in its scientific development and education than any country had gone before.

The development of scientific medicine in Germany is perhaps the most instructive of all. In the first half of the nineteenth century it had remained far behind France, England and Austria. But during the second half of that century it was lifted by the all-controlling influence of a pathologic anatomist, Virchow, from a position nothing short of ridiculous to a position of greatness and leadership. German medicine through the first half of the nineteenth century had been under the influence of the speculative natural philosophy of Schelling. Long after France, England and Austria had made serious efforts to overcome the purely speculative ideas and systems, German medicine by clinging to them had reached a point of lowest level. In the preface to the great encyclopedia of medicine edited by Virchow, who had just begun his work, he says significantly (1854): "German medicine on account of its views and dissenting 'schools' has become the laughing-stock of the world." There did not exist a well-founded universal scientific method of thought, investigation or teaching, but only opposed and battling "schools" and "systems" of medicine and therapy such as homeopathy of Hahnemann, polypragmasia, Rademacher's system, Priessnitz' system, therapeutic nihilism, eclecticism, Bouillaud's bleeding to unconsciousness of the patient, Dietl's absolute condemnation of bleeding as a criminal offense (1849), Mesmerism and others. They formed the source of endless and senseless discussions, for they were all speculative and contributed much to the entertainment of their pompous defenders and the laity but not to the benefit of their patients. In other words, therapy absolutely lacked a scientific objective support and backbone, for there existed in pathology only individualism and, therefore uncertainty. It was not even a time of crude empiricism, but a phantastic period which like a nightmare in individuals occasionally arises during the life of a nation.

An interesting illustration of what was then taught in pathology was given to me by Professor Senator in Berlin in the form of a syllabus used by Professor Schultz-Schultzenstein in his lectures in 1851 which Senator had still attended in his student days. The title of this syllabus is: "The Natural Families of Diseases, Berlin, 1851," and it contains this passage which I shall translate rather literally: "Disease has, although it represents a process of death, an organic combination of several actions, which develop from the innermost part of one nucleus. This nucleus is its principle. Disease grows from this nucleus to a system of actions. In this system the nucleus represents the fundamental action, the stem of disease, from which extend many branch actions as, for instance, constipation, colic, vomiting, fever, etc." Another passage: "The fundamental character of a disease may be either melanotic, apeptic, anaplastic, bilious, dysplasmatic; further anarethic, paralytic, but each of these may combine with those of opposite characters as branch actions." (The original German of this text has been published by Senator in his farewell address in *Berliner klinische Wochenschrift*, 1910, No. 34.) It will be seen that it is not made more ridiculous by the translation, as one might suppose. It is interesting to compare with it a passage from an article published in New York in 1909 by an author who shall remain nameless: "Chronic Bright's disease begins, in the vast majority of cases, as a general perversion of metabolism, excited by either simple strain or toxic inhibition of function, and

continues for years, presenting just as definite signs of renal distress as are suppression or coma. It is in these early stages of functional strain precedent to organic injury which are too frequently ignored, that Bright's disease is definitely curable. In this stage the obtrusive symptoms may be anything from grumpiness to goiter, from pestering activity to angina pectoris, etc., etc." Does not the same unsound speculative spirit of the early nineteenth century in Europe appear to reecho in America in the early twentieth century? Such peculiar and phantastic and mysterious systems existed in considerable number.

Virchow arose, out of this apparently hopeless chaos, first assistant to Froriep in the Charité Hospital in Berlin; he removed to Würzburg on account of many personal difficulties, but was called back to Berlin as professor of pathologic anatomy in spite of personal and political obstacles. It was one of the most far-sighted and commendable acts of the Prussian government, which declared thereby that a man's political creed and personal opinions have nothing to do with academic positions.

Virchow taught and demonstrated at the autopsy table with a system, perseverance and force never approached before, that every disease represented an anatomically localized process and that, therefore, the goal of all pathologic conceptions must be objective knowledge of, and location of the diseased processes—no speculative idea. Herein he was more radical than any of his predecessors, not excepting Rokitansky. Virchow broke with all traditions of scholasticism and recognized only deductions based on actual observation. He held that every physiologic process possessed an anatomic corollary; a disease, therefore, finds expression in anatomic, visible processes. The anatomic changes *represent* the disease. The only method, therefore, to arrive at a correct knowledge of the origin and course of a disease is to correlate the undeniable and visible autopsy experience of many cases, and to reproduce them experimentally. Thus vanished all speculation and discussions about the mystic character of diseases, which even Rokitansky had not entirely escaped. Virchow aroused sometimes much ire and controversy among his old pompous colleagues by actually "holding their mistakes under their own noses" at an autopsy.[1] He soon convinced the younger generation of the truth of his assertions, however, and the strength of a government position which made it impossible for his enemies to have him removed gave him an opportunity to declare himself forcibly and openly. In this he was not too reluctant as the many complaints about him to the minister of education testify. By strength of his academic position Virchow was able to declare his entire independence, and he made his laboratory for the first time of any in the world an independent scientific institute, which was not as formerly a mere addition for the immediate needs of the hospital. It enjoyed a building of its own, elegantly fitted up for those times. It became a great place not only of research but also of training in pathology. Virchow was most successful in this. It may be said without exaggeration that during his activity there was probably not a professor of pathology, medicine and surgery in Germany, to say nothing of foreign countries, who had not been taught or deeply influenced by him. The great pathologic institutes in Germany to-day are of his spirit, and under that spirit still devote the greatest attention to that branch of science which is intimately connected with the experience derived from post-mortem examinations. It forms the all-important pillar of German preeminence in medicine, and it served as the most striking example of the influence of pathologic anatomy on scientific thought and development in medicine in any country. It was Virchow's greatest pride that he had taught physicians to think anatomically—that is, objectively. It was of greater consequence to the welfare of communities than a dozen individual brilliant discoveries.

1. Virchow was much aided in his earlier days by his forceful friend Reinhard, who unfortunately died too young to become generally recognized. Virchow paid him a great tribute in the fourth (1852) and one-hundredth (1885) volumes of his Archiv.

THE PRESENT POSITION OF PATHOLOGIC ANATOMY

Having established in a general outline the historic fact of the remarkable influence of the study of disease after death on the scientific development of medicine and therefore on the welfare of the living in all countries, it becomes necessary for me to present the importance of this study in greater detail and to trace the reasons for its great influence on scientific medical thought.

Mention has already been made of the fact that the experience at the autopsy table has two sides: a purely scientific and an educational. We shall view them independently. The enormous advances in medicine have demanded in the course of time somewhat of a division of labor. We can recognize at the present day two main groups of investigators—those who deal with the direct cause and prevention of disease, the bacteriologists; and those who explore the disease after its establishment in the body: they determine the natural history of a disease. It is the chief duty of the pathologic anatomist, who is aided in it by experiment and chemical research.

The fact that we know to-day the direct causes of many diseases does not allow us to dispense with the services of the autopsist and microscopist. If, for example, it should ever be proved that cancer was an infectious or parasitic disease, we should be no nearer the understanding of the nature of the cancerous process than before. For the most important question would remain unsolved, namely, how any parasite could induce cells to grow characteristically and incessantly to the destruction of the whole organism. But, after a disease is established in a person, is it not of great consequence to know what visible changes in cells and tissues lead to or are associated with such destructive action? I need only mention the difficult question of dissemination of cancer cells and their growth in distant parts of the body. Only a full understanding of the factors determining these phenomena will allow an intelligent treatment.

Another illustration: We know that "diphtheria" is caused by a specific micro-organism, and also that it may be controlled largely by its antiserum. But the problem of the character of the diphtheritic process in the throat and the other changes the disease produces in the body can be solved only by careful post-mortem investigation. This gives us information about important features of the disease: for example, a child may have died very unexpectedly during what appeared to be a mild attack of this disease. We are at a perfect loss to understand why until we examine the heart and find it markedly and unexpectedly diseased. This is information we could never derive from a study of the cause of the disease, but if we find post-mortem evidence of it in many cases of diphtheria we are justified in concluding that diphtheria is a disease which exhibits a marked tendency toward a characteristic involvement of the heart. But a fact thus established by autopsy is of the greatest practical importance, for it directs the attention of the physician to what he must carefully watch and guard against during this disease. Such examples could be readily multiplied, many of them very complicated and therefore still unsettled and under investigation, for there are many diseases in regard to the causes or the mode of action of which we are still uncertain. Some diseases are much complicated by environmental influence; others are the results of several causes one of which may modify the action of the other. Take, for instance, the much-talked-of arteriosclerosis. It is not a disease that can be traced to a definite micro-organism at all. The direct causative effect of alcohol is very uncertain, to say the least, and its manifestations in people living under different social and economic conditions very different. Angina pectoris, one of the important causes of death among the well-to-do in later life (the so-called death of heart-disease) occurs very rarely in the poorer classes. In charity hospitals it is almost unknown. What is the cause of this? Only a very careful comparison of the manifestations of this disease among all concerned will lead ultimately to a solution of this difficult and practically so important problem.

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Another illustration: The fact that the tubercle bacillus has been definitely known as the cause of tuberculosis has not at all settled the manner and method of infection. There is even now a decided difference of opinion as to how the infection and dissemination of the tubercle bacillus through the body occurs. Is it inhalation? Or ingestion? How is the bacillus or its toxins carried through the body? Why does it settle in one part and not in another? What changes does it produce in tissues? What diseases are caused by this bacillus? There are many obscure, doubtful glandular diseases the relationship of which to the tubercle has not been determined. How will these questions be solved? Only by the anatomic investigation which alone can trace the origin of a lesion and its manifestations through the body.

Finally, one more example of the same type: Pneumonia is a well-understood disease as far as its causes are concerned, but what determines its manifestations? What is responsible for its course, good or bad, its terminations into abscess of the lung or gangrene and its malignant character among the aged? Here the autopsist comes again to our rescue and explains these perplexing questions on the hand of his structural observations. He shows that the good termination depends on the unhindered removal of the inflammatory products through natural channels, the lymphatics, and the bad on blocking or obliteration of these paths of resorption; that in the lung of the aged the elasticity and many important structures which aid in the removal of inflammatory products have been lost in the process of aging and that therefore this infection is so much more dangerous. Moreover, in the study of hereditary diseases which descend from generation to generation, it is of great importance to study closely the changes which lead to death in an individual in order to know how to safeguard the interests of the survivors, and eventually to eradicate the disease from future generations and descendants.

While the foregoing examples relate to individual cases of disease, the regular systematic performance of autopsies assumes much wider and general dimensions in the collection of reliable trustworthy statistics. It is not generally recognized how much still remains to be done in this line. A correct scientific diagnosis of a disease, such as is demanded for a useful record, can be made only after death by one well trained in pathologic anatomy. Our present American statistics as kept by almost all boards of health in this country are extremely faulty and are scientifically worthless. Even not considering those returns of the cause of death made worthless by neglect, stupidity and by intent—and they are not too infrequent—all purely clinical diagnoses that are based on uncertain symptoms only must remain pure conjectures that lack the necessary objective proof. But reliable statistics are of the greatest consequence to a nation. Take alone the cancer question. Is cancer really on the increase or only apparently so? Professor Bashford, director of the Imperial Cancer Institute in London, has severely criticized the American statistics in this regard and asserted that the returns from Ceylon were more reliable than those from New York. The same is true of other important diseases: of the heart, Bright's disease, etc.

There is no absolutely certain clinical diagnosis, and even if the autopsy proves the main diagnosis correct it almost always discloses important associated lesions which in their obscurity escape even the most careful clinical observer. Nevertheless these may have an important bearing on origin, course and symptoms of the disease. Dr. Cabot, an eminent diagnostician of Boston, has recently published[2] the percentages of correct clinical diagnosis of what appeared to be the most important lesion revealed by 3,000 autopsies. These are here appended, and it must be noticed that only a few of the most evident diseases exceed 75 per cent. in the hand of an experienced diagnostician; many important diseases fall below 50 per cent. in recognition, some even below 25 per cent.:

TABLE 1.—PERCENTAGE OF CORRECT DIAGNOSES IN VARIOUS DISEASES

	Per cent.		Per cent.
Diabetes mellitus	95	Miliary tuberculosis	52
Typhoid fever	92	Chronic interstitial nephritis	50
Aortic regurgitation	84	Thoracic aneurysm	50
Cancer of colon	74	Hepatic cirrhosis	39
Lobar pneumonia	74	Acute endocarditis	39
Chronic glomerulonephritis	74	Peptic ulcer	36
Cerebral tumor	72.8	Suppurative nephritis	35
Tuberculous meningitis	72	Renal tuberculosis	33.3
Gastric cancer	72	Bronchopneumonia	33
Mitral stenosis	69	Vertebral tuberculosis	23
Brain hemorrhage	67	Chronic myocarditis	22
Septic meningitis	64	Hepatic abscess	20
Aortic stenosis	61	Acute pericarditis	20
Phthisis, active	59	Acute nephritis	16

It is also interesting to record in this connection that Professor Orth, director of the Pathologic Institute in Berlin, makes the statement that of all appendixes that have been submitted to him for examination by conservative surgeons with the clinical diagnosis of appendicitis, as many as 17 per cent. showed no disease.

This takes us to the educational value of post-mortem examinations.

The historical introduction has shown that the indisputable facts of an autopsy prevent useless speculation and discussion. With an elementary force pathologic anatomy keeps the truth before the eyes of student and practitioner. It furnishes their conceptions of disease a backbone of actual facts and it impresses on them true visual ideas of diseased processes without becoming phantastic, and last—not least—it makes the treatment scientific and reliable.

The student and physician who think anatomically think truthfully—they need no "school" or "system" of ideas to speculate about the character of a disease. They see and therefore know what actually occurs. They must only be given opportunity to enlarge their experience in that direction. Such a physician applies a treatment not because it rests on a premise of some one else's authority, a premise that he can neither prove nor disprove, but because he has personal knowledge of a disease by his own observations; he knows its character and therefore how it may or may not be beneficially influenced. He is not, to use the old grotesque expression, like the blind man in a dark room looking for a black cat that is not there, but a scientist, no matter how humble a practitioner, who approaches his patients with the certainty and moral conviction of real knowledge. Individual "schools" and "systems" of medicine have therefore almost entirely disappeared in Germany. Only remnants still exist, like the memory of a nightmare the morning after. The state recognizes, teaches only and requires a severe examination in scientific medicine.

It is said that if a country wishes to shape its destiny, it must study the history of others. America is fortunate in that respect. It has before it the combined and sometimes sad experiences of centuries of Europe and it is free to adopt or to discard. Should it not profit by this experience? This is what Goethe meant, when he said:

Amerika Du hast, es besser, als unser Continent der Alte!

II. STATISTICS OF POST-MORTEMS IN LARGE HOSPITALS OF THE UNITED STATES AND ABROAD

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In order to obtain statistical evidence of the amount of autopsy work performed in some of the largest institutions in this country and England and Canada, letters were sent out to twenty-eight hospitals inquiring as to the number of deaths for the last three years ending December, 1912, the number of autopsies performed during the same period, the percentage of correct clinical diagnoses as revealed by the autopsies, and the laws and regulations governing the performance of autopsies.

2. Cabot, Richard C.: Diagnostic Pitfalls Identified during a Study of Three Thousand Autopsies, THE JOURNAL A. M. A., Dec 28, 1912, p. 2295.

Replies have been received from eighteen institutions in this county and eight hospitals abroad. Statistics of the German and Austrian hospitals were obtained from the printed reports of the institutions.

All the statistics have been arranged in Tables 2 and 3.

The striking fact brought out from the comparison of the statistics of autopsies in foreign hospitals and in American hospitals is that the percentage of autopsies performed in our largest hospitals, some of them connected with teaching institutions, is but one-eighth of the percentage of autopsies performed abroad. While the University College Hospital of London reports an average of 84 per cent. of autopsies, St. Thomas' Hospital of London reports an average of 75 per cent., St. Bartholomew's of London an average of 79 per cent., another English hospital an average of 83.7 per cent., the Montreal General Hospital an average of 83 per cent., Bellevue Hospital of New York performed autopsies on only 10 per cent. of patients dying in the hospital, Boston City Hospital on 9 per cent., and the Philadelphia General Hospital shows an average of a little over 10 per cent. And these are the three largest hospitals in the country. Other hospitals show a still lower percentage, while a number of the smaller hospitals in which the number of deaths is comparatively small show much higher percentages. Thus, Johns Hopkins Hospital had post-mortems performed in 62.8 per cent. of cases and the University of California Medical School Hospital in an average of 42 per cent. of cases, but the total number of deaths in these two institutions for the last three years amounted to 705, all told, while the number of deaths in Bellevue alone for the same period was 8,918, in Boston City Hospital 4,421, and in the Philadelphia General Hospital 5,921—a total of 19,260 deaths as against the 705 cases of the two institutions in which the percentage of autopsies is relatively high.

The relative as well as the absolute number of autopsies in some of the American Hospitals has been constantly falling

TABLE 2.—STATISTICS OF AUTOPSIES IN AMERICAN HOSPITALS
(Exclusive of Medicolegal Cases)

Name of Institution	Year	Number of Deaths	No. of Autopsies Performed	
			Total	Per Cent.
Bellevue Hospital, New York	1910	2,968	301	10.1
	1911	3,035	354	11.6
	1912	2,915*	343	11.8
Presbyterian Hospital, New York	1910 / 1911 / 1912	1,146	281	24.5
New York Hospital, New York	1910	460	103	22.4
	1911	524	87	16.6
	1912	457	94	20.6
St. Luke's Hospital, New York	1910 / 1911	618	89	14.4
Mt. Sinai Hospital, New York	1910	719		
	1911	738	158	7.3
	1912	705		
House of Relief, New York	1910	230	36	15.6
	1911	184	57	30.9
	1912	206	74	35.9
Massachusetts General Hospital, Boston	1911	475	143	30.1
	1912	429	66	15.4
Boston City Hospital, Boston	1910	1,327	195	14.7
	1911	1,483	113	7.6
	1912	1,611	100	6.2
Louisville City Hospital, Louisville, Ky.	1910 / 1911 / 1912	698	120	17.2
San Francisco City and County Hospital, San Francisco	1910 / 1911 / 1912	1,486	670	45.1
University of California Medical School Hospital, San Francisco	1910	66	18	27.3
	1911	51	22	43.1
	1912	37	21	56.8
New Haven Hospital, New Haven, Conn.	1910	254	37	14.6
	1911	235	16	6.8
	1912	209	25	8.5
Johns Hopkins Hospital, Baltimore	1910 / 1911 / 1912	551	346	62.6
Jefferson Hospital, Philadelphia	1910 / 1911 / 1912	620	104	16.8
Buffalo General Hospital, Buffalo, New York	1910 / 1911 / 1912	896	117	13.1
Albany Hospital, Albany, N. Y.	1910	239	24	10
	1911	268	22	8.2
	1912	272	13	4.8
Philadelphia General Hospital, Philadelphia	1910	2,122	324	15.3
	1911	2,050	293	14.3
	1912	1,749	196	11.2

*Up to December 1.

TABLE 3.—STATISTICS OF AUTOPSIES IN FOREIGN HOSPITALS
(Exclusive of Medicolegal Cases)

Name of Institution	Year	Number Deaths	No. of Autopsies Performed	
			Total	Per Cent.
Montreal General Hospital, Montreal, Canada	1908	292	235	80.4
	1909	294	229	77.9
	1910	272	235	86.4
Royal Victoria Hospital, Montreal, Canada	1910	207	...	73
	1911	267	...	62
	1912	264	..	67.8
Toronto General Hospital, Toronto, Canada	Oct., 1911 to Sep., 1912	321	82	26.3
University College Hospital, London, England	1910	333	276	82.8
	1911	284	244	85.9
	1912	257	217	84.4
St. Thomas' Hospital, London, England	1910	622	468	75.2
	1911	676	486	71.9
	1912	611	473	77.4
St. Bartholomew's Hospital, London, England	1910 / 1911 / 1912	2,010	1,597	79.4
Royal Infirmary, Edinburgh, Scotland	1910 / 1911 / 1912	2,466	1,453	58.9
Large English hospital whose name cannot be divulged	1910 / 1911 / 1912	4,037	3,378	83.7
*Charité Hospital, Berlin, Germany	1910	1,588	1,480	93
	1911	1,597	1,472	92
	1912	1,527	1,419	92
*Eppendorf Hospital, Hamburg, Germany	1908	2,322	2,012	86
	1909	2,417	2,181	90
	1910	2,487	2,220	89
*St. Georg Hospital, Hamburg, Germany	1908	1,272	1,129	88
	1909	..	1,218	..
	1910	.....	1,168	..
Pathological Institute, Leipsic, Germany	1900	1,082	1,018	94
	1901	1,224	1,139	93
	1902	1,246	1,160	91
	1903	1,325	1,213	91
	1904	1,385	1,258	90
	1905	1,516	1,352	89
	1906	1,562	1,383	88
	1907	1,719	1,531	89
University Hospital, Breslau, Germany	1905	....	487	90.7
	1907	.....	534	91.9
	1908	....	570	93.4
Allerheiligen Hospital, Breslau, Germany	1905	....	715	70.5
	1907	.....	1,038	87.6
	1908	....	1,077	89.8
Allgemeines Krankenhaus, Vienna, Austria	1903	1,950	1,793	91
	1904	1,867	1,866	99.9
	1905	1,929	1,875	97
Eight other hospitals, Vienna, Austria	1903	6,690	5,213	77
	1904	6,820	5,517	80
	1905	7,364	5,722	77

*The remaining percentage includes not only refusals, but legal cases.

off within the last few years. The number of autopsies in the Boston City Hospital was 195 in 1910, 113 in 1911, and only 100 in 1912, while the number of deaths in the hospital in that year was 1,611 as against 1,327 death in the year 1910. In the New Haven Hospital the percentage of autopsied cases fell from 14.6 in 1910 to 6.8 in 1911 and 8.5 in 1912. In the Albany Hospital the percentage of post-mortems has dwindled from 10 in 1910 to 4.8 in 1912, and in the Philadelphia General Hospital 324 post-mortem examinations were held in 1910 and only 196 in 1912. The variations from year to year in the number of autopsies in the English and European hospitals are insignificant and they never fall below 70 per cent. When the Philadelphia General Hospital had 196 post-mortems for its 1,749 deaths, Bellevue 343 for 2,915 deaths and the Boston City Hospital had 100 autopsies for its 1,611 deaths, in the Allegemeines Krankenhaus of Vienna 1,866 cases out of a total of 1,867 deaths came to autopsy in one year. In the Eppendorf Hospital, Hamburg, 2,220 cases out of a total of 2,487 were autopsied, and 244 out of 284 dying in the hospital came to autopsy in the University College Hospital of London in 1911.

Five causes can be assigned for this pitifully poor showing of our hospitals: (1) adverse public opinion and existing prejudices; (2) the existing law; (3) the undertakers and burial societies; (4) hospital rules, and (5) the claims of the departments of anatomy.

1. Adverse Public Opinion and Prejudices.—In no other civilized community is there so much aversion to post-mortem examinations as in this country. This is partly due to the fact that no great effort was made in the past century to perform them. We have not endeavored in the past to be in the vangnard of medical science and education, and did not attempt to impress the public with the importance of autopsies to medicine and to mold public opinion in favor of them, although we had autopsies performed in this country as far back as the first half of the seventeenth century.[3]

When the public recognizes that autopsies are indispensable for the progress of medical and surgical science, for the proper understanding of the diseases, and for the adequate training of physicians, and are essentially different from anatomic dissection, the existing prejudices will be overcome and the present adverse attitude changed.

With the great abundance and variety of material in our hospitals, with our equipment and facilities, and with the large corps of scientific workers we possess, a great stimulus to medicine would be given if the prevailing public opinion and the present laws with regard to autopsies could be changed.

2. The Existing Law.—The Laws of New York Relating to Autopsies: Outside of legal cases, in which death is caused by homicide, suicide and accident, or occurs suddenly or in a suspicious manner, which come under the jurisdiction of coroners and prosecuting officers, and in which inquests on the bodies may be held under the authority of the penal code, all other post-mortem examinations in New York state can be performed only so far "as the husband, wife or next of kin of the deceased, being charged by law with the duty of burial, may authorize dissection for the purpose of ascertaining the cause of death,"[4] or if permission for autopsy was given by the deceased before or during the illness which caused the death.[5]

Autopsies which are performed without the consent of the next of kin are illegal and punishable as a misdemeanor even though the next of kin may not be known to the hospital or may reside in a foreign country or be beyond the reach of communication. No necropsy, no matter how scientifically important it may be, can be performed without the permission of the next of kin. In the majority of cases no autopsies can be performed on the unclaimed dead. The number of unclaimed dead in Bellevue alone was 654 in the year 1912. Then, when such permission is obtained, it does not always protect the man performing the autopsy. The permission obtained may prove invalid should relatives nearer to the deceased person than the one from whom consent was secured challenge the right of autopsy. The terms of the law giving the right to grant permission to the "next of kin" charged by law with the duty of burial and not clearly establishing the order of priority of relatives have given occasion to a number of lawsuits. Complications arise when the next of kin are minors or when there are several persons owning the same degree of relationship, and they are not agreed on granting the permission for a post-mortem examination. When no proper permission is obtained for an autopsy, action can be maintained for the illegal mutilation of the remains. In such an action a recovery may be had "for injury to the feelings and mental suffering" resulting directly and proximately from the wrongful mutilation of the body, although no actual pecuniary damage is alleged or proved.[6]

Even if the law should specify the order of priority, the burden of finding the proper person would devolve on the hospital or person desiring to perform the autopsy. Such searches are often impossible, and invariably mean unfortunate delay.

Moreover, in case no relatives are found, the authorization of a friend cannot safely be acted on, although the same friend can compel a hospital to deliver the body to him for burial.

As it now stands, our law relating to autopsies is indefinite in expression, uncertain in application, obsolete in spirit, detrimental to scientific progress and injurious to the best interests of the public.[7]

The Law in Foreign Countries: The British law, although old (dating back, practically unchanged, to Aug. 1, 1832) and containing provisions similar to ours, can, however, be interpreted much more liberally than ours. The two principles underlying the British law are:

1. No property resides in a dead body except so far that it belongs to the executors or relatives solely for the purpose of disposing of it according to law; and

2. No assault can be committed on a dead body.

It follows from these two principles that "in the mere act of performing an autopsy a medical man cannot be committing an offense known to the law, provided that as a matter of provable fact such has not been expressly forbidden by the subject during life, or his executors or nearest kin after death."[8]

Permissions for autopsy are easily obtained in England and lawsuits ensuing out of illegal post-mortems are very rare.

Regulations relating to the performance of autopsies are made by the hospitals. In some hospitals in England all patients, on entering, sign a form agreeing to a necropsy in the event of death. In others, the regulations are that autopsies shall be made on the bodies of all persons dying in the hospital or brought in dead. The representatives of the deceased are, however, at liberty to prevent the holding of an autopsy by giving due notice, and a statement to that effect is placarded in the hospitals.

The Canadian laws require permission of the nearest relatives, but in the Province of Quebec a law was passed a few years ago whereby all institutions receiving state aid may demand autopsies on the bodies of those who have been free patients.

In Austria the law provides that, as a matter of right and duty, every case—whether the patient be rich or poor—terminating in a general hospital, must be autopsied.[9]

3. Steiner, Walter R.: Some Early Autopsies in the United States, Bull. Johns Hopkins Hosp., August, 1903; Dewis, John W.: Champlain's Narrative of Early Autopsies in North America, ibid., May, 1905.

4. Art. 198, Sect. 2213 of the Penal Law.

5. Sec. 2210 of the Penal Law. [In 1910 the Supreme Court of California decided that one cannot dispose of his own corpse by will. See Henry W. Cattell: Post-Mortem Pathology, Ed. 3, Philadelphia, 1906, p. 5.]

6. Darcy vs. Presbyterian Hospital, 202 N. Y. 259 at p. 262 (1911).

7. A detailed discussion of the law will be found in the appendix a report of Philip J. McCook of the New York Bar, being an appendix to the committee report.

8. Smith, Fred. J.: Law for Medical Men, London, 1913, p. 81.

9. Flexner, Abraham: Medical Education in Europe, New York, 1912, p. 95.

In German hospitals autopsy takes place as a matter of routine, unless the contrary is specifically requested.[10]

With the growth of the appreciation on the part of the general public of the fact that medical science cannot progress or hold its own without the extensive anatomic and clinical use of the cadaver, and with the growth of general education and the gradual disappearance of prejudices, the laws of foreign countries relative to post-mortem examinations as well as the hospital rules regarding them have undergone changes which relieved the hospitals of the irksome burden of seeking permissions and at the same time left to the relatives the right to prevent an autopsy if they should so desire.

3. Undertakers and Burial Societies.—Another source of impediment to the work of the pathologist consists of the undertakers and certain burial societies. The first use it as a means of securing business; the others try to prevent autopsies on the basis of some religious prejudices. Our foreign population, accustomed to the matter of autopsies in the countries where they come from, would not think of objecting to them here were it not for the promptings of the undertakers and burial societies. One of the pathologists connected with a large hospital in New York, speaking of the absurdly small proportion of autopsies to deaths in the hospital, attributes it to the influence of undertakers in trying to prevent autopsies. "They seem to get wind of death of the patient," he writes, "before this has happened and they approach the family with the promise that no mutilation will be allowed if they are given the job of managing the funeral."

Then some religious burial societies are very largely active in preventing autopsies on the unclaimed bodies of their coreligionists.

4. Hospital Rules.—Only one of the American hospitals included in this inquiry requires, on entrance, a signed permission from the nearest relative for post-mortem examination in every case. No patient is admitted unless such permission is given. The adoption of this rule was deemed necessary owing to the importance of correcting the clinical and laboratory findings from the research point of view, and it is stated that this rule has proved extremely satisfactory.

In all the other hospitals the rule is to try to obtain permission after the patient's death, and this duty devolves on either the clerks or the interns. Their success in obtaining permissions depends much on their power of persuasion, sagacity, tact and interest in the matter. It has been found to be more practical to leave this duty to a medical man.

One hospital reports that there was a decided improvement in the number of autopsies at the hospital since the appointment of an assistant superintendent, a young physician who has taken over as a part of his duties the obtaining of permission for autopsies.

Another hospital attributes its good fortune in obtaining permission to the fact that extreme care is taken over the toilet of the cadavers subjected to autopsy and also to the fact that the office staff who receive the friends of patients dying in the hospital take a particular interest in urging that an autopsy be performed for the benefit of the family, that the family may know all about the presence of constitutional diseases.

If similar rules, regulations and practices should be adopted by private hospitals, they would undoubtedly prove beneficial in a great many instances.

5. The Claims of the Departments of Anatomy.—There exists one additional difficulty under the present law in utilizing all the material available in the hospitals, which has not hitherto been mentioned, namely: The demands of the departments of anatomy on the unclaimed dead, which constitute a large number of important deaths in public hospitals. Frequently unclaimed bodies which are very important from the pathologic point of view are thus used for dissecting purposes in the departments of anatomy.

10. Flexner, Abraham: Medical Education in Europe, New York, 1912, p. 96

This extremely unsatisfactory condition has arisen from the lack of recognition on the part of the law of the difference between anatomic dissection and a pathologic autopsy. The anatomic dissection is done for the purpose of systematic study of normal anatomy. This study necessarily calls for the permanent possession of the body and entails complete taking apart of the body. A pathologic autopsy, on the other hand, simply requires the opening of the various cavities of the body in order to disclose the pathologic lesions. It therefore consumes much less time and does not disfigure the body to any extent, and in its results to the cadaver is practically analogous to what is done in embalming.

To avoid all possible friction and loss of important material, it would seem advisable so to change the laws and rules with regard to this class of cases that the pathologists have unrestricted use of the cases which were clinically observed, while all bodies of persons dying outside of hospitals be distributed to the anatomic departments in ratio to the number of students. The distribution of the bodies could be most satisfactorily carried on under the supervision of a committee composed of all the professors of anatomy in the medical schools of the state.

PERCENTAGE OF CORRECT CLINICAL DIAGNOSES AS ESTABLISHED BY AUTOPSIES

This part of the investigation was the least successful. Only seven institutions answered the questions asked. The others stated either that no records are available or that no answer is possible.

The percentages of correct clinical diagnoses in four institutions were given as 60, 47, 78 and 71. In one hospital in which 200 cases were examined, the autopsy showed that 133 were rightly diagnosed, forty-three had a wrong diagnosis, and no diagnosis was made in twenty-four cases. In another instance of 100 autopsies, 10 cases were not observed longer than twenty-four hours, 12 were complete errors of diagnosis, 21 main diagnoses correct but important conditions not diagnosticated, and the remaining 57 cases were correct. In a third instance, out of 117 autopsied cases, 60 cases were correct, 14 incorrect, and in the remaining 43 cases the patients were in the hospital too short a time to permit a diagnosis to be made.

III. SUMMARY OF THE REPORT

1. The history of medicine shows that modern progress in medical science and the further development of medicine in the future is closely correlated with the extensive use of cadavers for post-mortem examinations.

2. In European countries the importance of necropsies has been universally recognized and neither public opinion nor prejudices, nor the law, cause any difficulties to the use of persons dying in hospitals for purpose of post-mortem examination.

3. The absolute and relative number of autopsies performed in American hospitals is extremely small in comparison with the number of autopsies performed in European hospitals.

4. Our research institutions, scientific bodies and medical colleges are greatly hampered in their work by the prevailing hostile attitude of the public and the law with regard to the performance of autopsies.

5. Our laws relating to autopsies are indefinite in expression, uncertain in application, obsolete in spirit, detrimental to scientific progress and injurious to the best interests of the public.

6. The main causes of the difficulties in obtaining permission for autopsies are due (*a*) to the ignorance on the part of the public of the importance of autopsies to science and therefore to the welfare of the people; (*b*) to the existing inadequate laws; (*c*) to the activity of undertakers and certain funeral societies, (*d*) to the inadequate rules of the hospitals in this respect, and (*e*) to the claims of the department of anatomy.

7. As a result of the slight opportunities given to physicians to study their errors of diagnosis, the percentage of incorrect diagnoses is unduly large.

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RECOMMENDATIONS

The small number of autopsies performed in our hospitals despite the efforts made by many of them to obtain permissions for performing them, proves very forcibly that some changes in the public mind and in the existing laws must be brought about in order that medical education and medical progress in this country may not be seriously hampered.

The committee would therefore recommend:

1. That effort be made on the part of various medical bodies to interest the press in the matter of autopsies with a view of presenting to the public the absolute dependence of medical progress and education on the regular performance of post-mortem examinations.

2. That effort be made to secure legislation relative to autopsies, similar to that of European countries, which would obviate the necessity of securing written permissions and at the same time safeguard all the present rights of the relatives.

3. That the law should be so amended as to recognize the difference between anatomic dissection and pathologic autopsy made for scientific purposes.

4. That until such legislation is secured, the boards of managers of all our private hospitals be urged to have the hospital rules so changed as to remove as much as possible the obstacles now placed in the way of securing autopsies.

BACTERIAL VACCINE THERAPY: ITS INDICATIONS AND LIMITATIONS*

(*Continued from page 1705*)

VII

DANGEROUS RECOMMENDATIONS

From the point of view of actual menace to life, the most hazardous advice is that which encourages the physician to rely on bacterial vaccines in certain acute localized infections in which operative measures are indicated, as for example in acute appendicitis, cholecystitis and mastoiditis. By specious advertising, or even by direct recommendation the undiscriminating practitioner is allured into relying on inoculations of stock vaccines in these dangerous conditions, with the result that good surgical counsel is not sought, or is sought too late for successful operative intervention.

The situation is almost equally grave in certain septicemic complications in which operative procedures are unavailing, such as puerperal infection. Here the success of immunizing treatment, if success is possible, depends on the prompt identification of the offending bacteria, and the early use of most accurately adjusted doses of the autogenous vaccine. But the physician who accepts the guidance of commercial vaccine institutions will use some one or other of the marketed mixed vaccines or "bacterial derivatives" advertised as suitable for just such emergencies, and often lose the only possible opportunity to avert a fatal issue.

HARMFUL ADVICE

In subacute and chronic infections the risks of abusing vaccine therapy under the stimulus of misleading advice are not immediate as regards life, but much harm and needless suffering may be caused. This is illustrated by those affections in which mechanical obstacles to recovery exist, which must be removed before a cure can be expected. Urinary calculi, biliary calculi, occluded appendixes, adenoids, pus-tubes, urethral strictures, abscesses requiring drainage, necrotic bone—these are some of the pathologic conditions in which vaccine therapy has been used to the exclusion of the appropriate operative procedures, or even of a correct diagnosis. Also in subacute and chronic infections it has come about that implicit reliance on bacterial vaccines has deprived the patient of appropriate non-operative therapeutic measures, either alone or as accessories.

TECHNICAL OBJECTIONS TO MARKETED STOCK VACCINES

Aside from the faults that accompany misleading therapeutic claims there are a number of valid objections which apply to all commercial bacterial vaccines. These shortcomings may be itemized as follows:

1. *Uncertainty as to Source of Culture.*—Commercial laboratories depend on outside sources for cultures which are obtained from individual clinicians, public clinics or hospitals. Rarely is it possible to learn anything definite as to what complicating factors exist in a given case. Thus a culture may be obtained from a patient afflicted with some concomitant infection whose existence is not clear at the time the culture is secured. A culture of staphylococcus or streptococcus, for instance, may be yielded by the pus from an ulcer which subsequent events will show to have been of syphilitic origin; it may, in fact, be a chancre before the secondary manifestations. It has actually happened in the practice of vaccine therapy that the material from which the vaccine was prepared was contaminated with the virus of syphilis, but luckily the vaccines were of the autogenous variety and inoculated only into the patient with the mixed pyogenic-syphilitic infection. It is altogether likely that the syphilitic virus was killed by the heat used in sterilizing the vaccine, and while the transmission of syphilis in this way is almost inconceivable, it illustrates the importance of investigating carefully the source of stock vaccines. No physician would care to subject himself to the criticism of having used such a vaccine. Other mixed pyogenic and chronic granulomatous infections like tuberculosis, glanders, actinomycosis and blastomycosis, and mixed pyogenic infections in which resistant spore-bearing anaerobes like tetanus and malignant edema occur, might be cited to emphasize further dangers.

2. *Uncertain Age of Culture.*—Just how long a given culture of pathogenic bacteria will retain its specific immunizing property, or when this property is lost under subcultivation, have never been definitely ascertained. The biologic characteristics of bacteria alter more or less rapidly under artificial environment, and since virulence is often rapidly lost, it is probable that antigenic potency is similarly precarious. The older the culture the less reliable it is likely to be.

3. *Uncertain Potency-Period of Market Vaccines and Suspensions.*—The unknown influence of time also applies to the therapeutic potency of ready-prepared vaccines and suspensions, a fact abundantly testified by clinical experience. This loss of therapeutic effectiveness as shown by clinical trials varies widely according to age, storage-temperature, and composition of different vaccines. This is the experience of bacterio-therapeutists who prepare their own vaccines and who employ mostly those of the personal or autogenous variety. Consequently this element of uncertainty must be magnified both in market vaccines and in the stock suspensions from which they are prepared. But with the purchased

* This series of articles has been prepared under the direction of a committee appointed for the purpose by the Council on Pharmacy and Chemistry of the American Medical Association. The committee consists of Drs. Ludvig Hektoen, Chicago; David L. Edsall, Boston; John Howland, Baltimore; Reid Hunt, Washington, D. C., and Albert P. Ohlmacher, Detroit.

vaccines the physician is helpless to remedy the fault if, indeed, he is able to detect it.

4. *Possibility of Dangerous Contaminations.*—The risk of accidental contamination of the vaccine during or after preparation has been strongly emphasized by several eminent bacteriologists. The danger of contamination from street dust which may contain tetanus germs demands constant care. Accidents such as these can of course occur to the private practitioner of vaccine therapy who makes and uses his own vaccines. Their occurrence should at all times be kept in mind and every precaution taken both to safeguard against them, and to have the protection of all possible skill and experience to offset the criticism such an accident would entail. Naturally the opportunities for such disasters are multiplied in marketed vaccines, especially in those laboratories in which much routine work is delegated to unprofessional assistants, or those in which the actual work of preparation is entrusted to persons inadequately trained in bacteriology. Unfortunately the responsibility of accidents from commercial vaccines rests on the physician administering them, and not, as it properly should, on the manufacturer.

5. *Uncertainty as to Dosage.*—As already remarked, dosage is one of the fundamental factors of success in vaccine therapy. Inflexibility in dosage is one of the serious faults incidental to the use of commercial bacterial vaccines as at present supplied. A single dose in a single container may be too large or too small to meet the requirements of a given case. The extensive latitude which appertains to the therapeutic dose of bacterial vaccines is left entirely to the resources of the physician without supplying him with the means of meeting these extremes. Attempts to remedy these defects have been made by furnishing certain vaccines in graduated containers with what is presumed to be a maximum dose, fractions of which are supposed to be withdrawn at discretion. Another device for meeting the defects in dosage is offered by a set of bulbs with varying quantities of bacteria, the plan being to increase the doses serially, doubtless with the hope that some will be found adequate. As pointed out under the discussion of dosage, these expedients are to be avoided; and they impress the fact that dosage in commercial vaccines is by no means adequately provided for.

6. *Vaccines of Questionable Identity.*—Among the well-known bacterial species the question of identity of those composing a commercial vaccine need cause little concern. But with the rarer bacterial species serious mistakes in identification have been made. For instance, a commercial vaccine supposed to be of gonococcus proved to be derived from a small diphtheroid bacillus. The acne bacillus has also been incorrectly diagnosed. A vaccine marketed and advertised for pertussis was found to have as its source a culture of a bacterium growing readily on ordinary culture mediums; thereby differing widely from the bacillus of pertussis which grows so scantily. This organism failed to qualify in any of the special features characteristic of the whooping-cough bacillus of Bordet-Gengou. It is highly probable that critical analysis will disclose many shortcomings in commercial vaccines purporting to contain the more uncommon bacterial species.

7. *Complicated and Expensive Containers.*—A variety of packages for distributing separate doses of vaccine have been employed by manufacturers, some using a minute glass bulb, bottle or ampule, while others have introduced the syringe-container—that contrivance whose original adoption arose solely through competition in the marketing of therapeutic serums. No competent practitioner needs such artifices as these to perform a proper inoculation, and he should discourage their manufacture and sale by insisting on simple and inexpensive containers for serums and vaccines.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

MAGNESIUM PERHYDROL.—A name applied to magnesium peroxid (for properties, actions and uses see New and Nonofficial Remedies, 1913, p. 185).

Manufactured by E. Merck, Darmstadt, Germany (Merck and Co., New York). German patents Nos. 141,821 and 171,372. No. U. S. patent. U. S. trademark No. 44,147.

MAGNESIUM PERHYDROL, 25%.—Magnesium perhydrol, 25%, is a mixture consisting essentially of magnesium peroxide and magnesium oxide with water of hydration, containing not less than 25% of magnesium peroxide (MgO_2).

It responds to the tests of identity and purity given for magnesium peroxide. The titration with potassium permanganate described under magnesium peroxide should indicate not less than 25 per cent. of magnesium peroxide MgO_2.

Manufactured by E. Merck, Darmstadt, Germany (Merck and Co., New York). German patents Nos. 141,821 and 171,372. No U. S. patent. U. S. trademark No. 44,147.

Magnesium Perhydrol, 25 %, Tablets, 7½ grs.—Each tablet contains magnesium perhydrol, 25%, 0.5 Gm. (7½ grains).

LUMINAL—(For properties, actions and uses see N. N. R., JOUR. A. M. A., May 17, 1913, p. 1541).

Manufactured by Farbenfabriken vorm. Friedr. Bayer and Co., Leverkusen, Germany (Farbenfabriken of Elberfeld Co., New York).

Luminal Tablets 1½ grs.—Each tablet contains luminal 0.1 Gm. (1½ grains).

Prepared by Farbenfabriken vorm. Friedr. Bayer and Co., Leverkusen, Germany (Farbenfabriken of Elberfeld Co., New York).

Luminal Tablets, 5 grs.—Each tablet contains luminal 0.3 Gm. (5 grains).

Prepared by Farbenfabriken vorm. Friedr. Bayer and Co., Leverkusen, Germany (Farbenfabriken of Elberfeld Co., New York).

LUMINAL-SODIUM.—(For properties, actions and uses see N. N. R., JOUR. A. M. A., May 17, 1913, p. 1541).

Manufactured by Farbenfabriken vorm. Friedr. Bayer and Co., Leverkusen, Germany (Farbenfabriken of Elberfeld Co., New York).

Therapeutics

PRESCRIPTION NONSENSE

In the following prescriptions it is not intended to comment on every discoverable mistake; our remarks are especially directed at the use of such multiple combinations. The following has been proposed and printed as a treatment for bronchial pneumonia in a child 3 years of age, one teaspoonful being given in water every three hours:

℞ Ammon. carb. ..... gr. xlv
Mucil. acaciae .....
Syrupi simplicis ..... āā ʒ ss
Tinct. lavandulae comp. ..... ʒ ii
Aquae ..... q. s. ad ʒ iv
In the tincture of lavender are:
Oil of lavender flowers
Oil of rosemary
Saigon cinnamon
Cloves
Nutmeg
Red Saunders
Alcohol
Water

In the first place, the primary thought should always be not to give the patient anything that will cause nausea and vomiting. This is particularly true with babies and children. Ammonium carbonate is always irritant. As an expectorant it has absolutely no advantage over ammonium chlorid, and as a cardiac stimulant is more or less of a failure. Ammonium carbonate can stimulate the heart or raise the blood-pressure only by irritating the throat, gullet and stomach, much as does the first irritation of whisky. In causing this irritation it very frequently causes vomiting. The irritation from the ammonium carbonate is covered up, in the above prescription, by the mucilage of acacia and the syrup. Therefore, as a cardiac stimulant it would be an utter failure. It might cause nausea. As an expectorant it is inferior to ammonium chlorid.

A sick child should not receive a lot of syrup and sticky mucilage. Very many times we prevent a child from receiving sweets and then give him sugar in some form in his medicine.

Some would criticize the use of the compound tincture of lavender on the ground that it is unnecessary and disturbing to give the young child these spices. Of course the 2 fluidrams in a 4-ounce mixture represents so little (a teaspoonful, approximately 5 c.c., representing about one-third of a cubic centimeter or 5 minims of this compound tincture of lavender), that it makes the addition nothing but a dash of cocktail for the baby.

As a whole, the prescription is bad. If an expectorant is needed, the required amount of ammonium chlorid, given in syrup of citric acid and water, which may be administered in a little lemonade or orangeade, will do the work, will not disturb the stomach, and will be perfectly palatable.

The following has been recommended and printed for bronchial pneumonia in which there is respiratory failure:

℞ Quin. sulph. ..... gr. xxiv
Strych. sulph. ..... gr. ¼
Acidi hydrochlor. dil. ..... ♏ xv
Glycerini ..... ʒ iii
Liq. pepsini ..... q. s. ad ʒ iv
M. Sig.: One teaspoonful in water every three or four hours for a child 5 years of age.

In the first place, with a very sick child the cerebral irritation from quinin is not advisable, unless it is positively needed. This preparation will be so intensely bitter that a child 5 years old would reject it. Also, it cannot be too many times urged that quinin will inhibit the digestive properties of pepsin preparations, and there is no excuse for administering quinin and strychnin with glycerin, pepsin and dilute hydrochloric acid.

If the stimulation from strychnin is required, the rapidity with which it would be absorbed, in this mixture, is so uncertain that with "respiratory failure" its value would be doubtful. If strychnin is required for a young child (and the necessity for its administration does not often occur) it would be better to administer it hypodermically, if positively needed. If given by the mouth, a teaspoonful of a solution of strychnin sulphate in water, in the required dose, might be given in orangeade or better, in a small cup of chocolate. As just stated, the nervous stimulating effect of strychnin and quinin are rarely desired in a seriously sick child, but if the indication for strychnin is positively present, it should be given in a way that the child will surely get it, and get it in a short time.

The following prescription has been recommended and printed for the same condition as the above, namely, respiratory failure in a child who has bronchial pneumonia:

℞ Strych. sulph. ..... gr. ¼
Acidi hydrochlor. dil. ..... ʒ i
Spts. chloroformi ..... ʒ iv
Ext. cinchonae liq. ..... ʒ iii
Aquae ..... q. s. ad ʒ iv
M. Ft. mistura.
Sig.: One teaspoonful for a child 5 years of age, every three or four hours.

The preceding discussion in relation to the administration of strychnin holds true with this prescription. The object of the dilute hydrochloric acid in it is difficult to discover.

The fluidextract of cinchona is an absurd ingredient, intensely disagreeable to take, and is a more unnecessary ingredient than the quinin in the above prescription, as the quinin was administered with a definite object, although we cannot approve of that object in this case. The fluidextract of cinchona should probably never be ordered.

The spirits of chloroform is irritant, and would be very disagreeable for a child to take. As a matter of fact the prescription would be intensely disagreeable, if not nauseating. Its perpetration is inexcusable, and a child would doubtless vomit it.

The following prescription, written by a physician and sent to a drug-store, is a good example of inexcusable prescription absurdity:

℞ Bism. submit. ..... ʒ iii
Calomel ..... gr. xii
Ex. belladonnae ..... gr. ii
Codeia ..... gr. v
Ex. hyoscyami ..... gr. v
Pulv. arom. ..... ʒ ss
Pul. fennel ..... ℈ ii
Sodii bicarb. ..... ℈ ii
Pepsin ..... ʒ ss
M. et ft. chart. No. x.
Sig.: One q. 3 h.

In the first place, a cathartic (calomel) is entirely out of place in a stomach sedative mixture containing bismuth, codein, belladonna and hyoscyamus. There is no real excuse for combining belladonna and hyoscyamus The action of both is practically that of atropin.

The combination of bicarbonate of soda with pepsin is of course a chemical mistake, as the alkali would inhibit the activity of the pepsin.

Why the powdered fennel is added to the aromatic powder it is difficult to understand.

The pharmacologic, chemical and pharmacal mistakes in the above prescription are absolutely inexcusable.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, JUNE 7, 1913

THE SMALLEST LUNG CAPACITY COMPATIBLE WITH LIFE

It is beginning to be appreciated that many of the organs of the body which are indispensable for life have a functional capacity far greater than that which they are called on to exhibit under the ordinary conditions of existence. This excess of available physiologic power above what is commonly called into play has happily been termed by a well-known American physiologist the "factor of safety." Two kidneys, for example, are available to perform the task which one can ordinarily execute satisfactorily; other glands are similarly duplicated in excess of what is necessary to accomplish the purposes for which they were intended.

In the case of the lungs this surfeit of tissue is perhaps less obvious on first consideration, because we are accustomed to rate the pulmonary needs of the body at a high figure. Nevertheless, it is well known that life may still continue, even though no inconsiderable part of the lungs be destroyed. In pneumonia, for example, sufficient pulmonary ventilation can proceed without ultimate detriment for some time, even when one lung has become entirely consolidated. Comparable conditions are occasionally brought about by purely mechanical interference with pulmonary ventilation. Physiologic literature records numerous experiments in which the lung capacity has been reduced at least one half, and Courmont has recorded the possibility of continuing respiration after destruction of three quarters of the lungs.[1] Now we are informed through the investigations at the Laennec Hospital[2] in Paris, that the reduction of the lungs to even one sixth of their ordinary capacity is not incompatible with the continuation of life. The method adopted by these French investigators to accomplish the reduction of the lung capacity is of interest, inasmuch as it was suggested by a procedure which has had some application in human therapy. They produced an artificial pneumothorax, such as has been made in human patients, by the introduction of inert nitrogen gas into the chest. The surprising result recorded encourages the belief that a total collapse of one lung may be produced without permanent detriment, even if the other lung be partly affected by previous disease.

The comparative innocuousness of a unilateral pneumothorax has been appreciated for some time. These experiments not only serve to explain certain cases of striking survival after pathologic interference with respiration, but also render less ominous the much-discussed procedures for rendering immobile considerable portions of the lungs in man. The margin of safety, long appreciated as the result of clinical experiments to be considerable, has thus been extended beyond the most generous allowances heretofore assumed possible.

1. Courmont, J.: Sur la pneumectomie expérimentale avec survie prolongée, Compt. rend. Soc. de biol., 1912, Nov. 23.

2. Bernard L.; LePlay, A., and Mantoux, C.: Capacité pulmonaire minima compatible avec la vie, Jour. de physiol. expér., 1913, xv, 16.

REGULATION OF THE HEAT OF THE BODY IN HOT CLIMATES

In all temperate climates and, if certain exceptional cases are noted, in almost all climates in which mankind is engaged in the usual activities of life, the temperature of the human body is higher than that of the environment, so that there is a tendency toward continuous loss of heat from the surface of the body. Except in so far as it is prevented by the insulating devices of clothing, this loss takes place in part by convection, that is, by warming the layers of air in contact with the body, as well as by radiation whereby there is an exchange of heat between the surface of the body and that of surrounding cooler objects. When there is occasion for the removal of a larger amount of heat, this is accomplished through the function of perspiration. In the evaporation of sweat a large amount of heat becomes latent and is removed from the body. The chief factor which may interfere with this procedure is the impeding of the evaporation by the presence of an atmosphere already saturated with water vapor so that the sweat can no longer be converted into the gaseous phase.

Few persons realize that there are, nevertheless, inhabited regions in which the temperature of the surrounding air is not lower than that of the body. In parts of India, for example, during the hot weather in March, April and May, the maximum temperature is daily seldom under 38 C. (100.4 F.), and in some places it rises to over 43 C. (109.4 F.) for long periods. Usually such habitable areas experience a very low percentage of moisture in the air. Wet heat is not usual, since with the rains the weather becomes cool.

It is well known that the body temperature can be maintained at its normal height in an atmosphere much higher than 37 C. (98.6 F.), in spite of the fact that the production of heat is still going on in the organism. It is said that a man can stand exposure to a temperature of 90 C. (194 F.) or even 120 C. (248 F.) for a considerable time provided that the air is dry. If the outside temperature be above that of the body, heat is actually added instead of lost; and this additional heat is greatly increased by exposure to a very hot sun or wind. Inasmuch as radiation and conduction are avail-

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able as cooling agencies only when the outside temperature is below that of the body, it is a matter of no little moment to understand what the organism is called on to do in order to prevent any marked rise of internal temperature. That an adjustment does take place is assured from the fact that during extremes of dry heat no great discomfort is felt by healthy persons; and it is stated on good authority that fairly hard physical work is possible in the sun, even with a "shade" temperature of 43 C. (110 F.) or more. Here the organism must depend solely on evaporation as a cooling agent; and this function must be sufficient to remove all the heat added from external sources as well as the heat due to internal metabolism. In a Turkish bath the loss of weight, represented almost entirely by water, may be at the rate of two pounds per hour.

Dr. E. H. Hunt, medical officer to the N. G. S. Railway, who resides in Deccan, India, where extremes of heat like those mentioned prevail, has furnished interesting data as to how one becomes adjusted to the physiologic and hygienic conditions thus created.[1] The heat contributed by the combustion of the ordinary food-supply sufficient to maintain nutritive equilibrium may be judged from its fuel value. If this is put at 3,500 calories for an active working man, a calculation shows that the amount of water the evaporation of which will absorb this heat at body temperature is 6 liters (about 6 quarts). Water must therefore be taken into the body in food and drink to supply this requirement in addition to what is lost by the urine and feces, is wasted by inefficient perspiration, or is needed to remove the heat actually added to the body from without, in the hot climates referred to.

Such hypothetical estimates have been compared by Dr. Hunt in India with actual observations made during an exceedingly hot and very dry period when, for some hours at midday, the lowest temperature which could be secured in tents under trees was 42.8 C. (109 F). All dry objects were as hot as this or hotter, and were uncomfortable to handle. The mercury in the thermometer fell at once when a hand was placed near it, or if it were breathed on. Until about midday the party of investigated healthy Europeans remained in the sun with no shade whatever, a considerable amount of physical exercise being taken. Such a life, we are told, is led by hundreds of Europeans in India, customarily with a gain rather than a loss of health. When health suffers it is usually through the incidence of infectious disease. None of the party, using strict moderation, consumed less than three gallons of liquid per day. Even with this the flow of urine was by no means free. When the activity and considerable exposure to the extremes of heat are taken into account in this experience, which probably represents an approach to the limit of comfort, the fluid intake is not far removed from the hypothetical estimate.

It is obvious that in such extremes of dry heat any failure of perspiration must lead to instant and grave risk. This failure may result from an insufficiency of drinking-water. It may equally result, as Dr. Hunt maintains, from pathologic processes incident to slight malaria, early typhoid, or any other process by which heat regulation is upset. He adds that he has not come across any case of pure "heat-stroke" or sunstroke in a proved healthy person. A man might suffer from but slight fever while indoors and might be unaware that he was ill; yet his whole regulation might completely fail if he were at work in the sun under conditions which involve an extreme effort even for the healthiest.

The main regulation of heat loss takes place by the control of the nervous system over the cutaneous circulation and the sweat-glands. When this fails, the temperature must speedily rise above the normal in these hot climates. General excitability is evinced and metabolism is stimulated so that a "vicious circle" is established. There is not even any compensation by lessened heat production. In "wet heat" the limit of safety is speedily reached. When the air is already more or less saturated with moisture, as indicated by high wet-bulb thermometer readings, evaporation is slow and inefficient, and danger ensues even during rest. The excess of sweat secreted and any increase in the amount of water consumed under such conditions merely increase discomfort rather than facilitate heat regulation.

The large amount of water absolutely required and actually consumed by men in these hot climates has not been appreciated adequately in any quantitative sense. Experiments by Hunt have demonstrated that a healthy man carries in his body a large reserve of water mainly stored in muscle and so readily available that the percentage of water in the blood is not appreciably diminished even when several liters of water have been lost by sweating. If, however, it is extensively drawn on, replacement seems to occupy many hours, and this delay is an important factor, forming a strong argument against any restriction of drinking which would cause undue or needless use of the stored water of the body.

1. Hunt, E. H.: The Regulation of Body Temperature in Extremes of Dry Heat, Jour. Hyg., 1912, xii, 479.

"BOB VEAL"

It is well known that the sale of the flesh of very young calves is prohibited by law. Up to 1906 the federal government fixed the age limit at four weeks; in that year it was reduced to three weeks, at which point it still remains. There is an unfortunate lack of uniformity in the laws of different states. New Jersey and Pennsylvania have adopted the three weeks' age minimum, but the majority of states and cities maintain a limit higher than that placed by the federal government, and Arkansas and Missouri prescribe an age limit of six weeks.

The most accurate method of determining the age of a calf seems to be by the appearance of the umbilical cord. In healthy calves the cord disappears within two

weeks. Guesses as to the age of a carcass based on the appearance and condition of the fat, on the appearance and eruption of the teeth, on the ossification of the bones, on the condition of the arched pad on the hoof and similar characters may be wide of the mark. Even careful histologic examination of the tissues by Moore and Gage has shown no difference that can be relied on to separate animals one week old from those that are six weeks old.

The sale of "bob veal" is forbidden presumably either on the ground of its unwholesomeness or for esthetic reasons, or both. It is a curious fact, as we have already pointed out,[1] that the evidence for the harmfulness of bob veal is of the slightest. Some at least of the cases of illness—not very numerous—attributed to the use of bob veal have been due to specific infection or to contamination after sale and not to the immaturity of the veal in itself. In the experiment recently conducted by Fish[2] bob veal was eaten by twenty persons of various ages, and no injurious effect was observed, not even the "laxative effect" ascribed to bob veal by some writers. The question whether or not immature calves are more likely to be specifically diseased than calves over three weeks old is one on which there seems to be some difference of opinion,[3] but it would seem to be capable of ready solution if a sufficient number of well-controlled observations could be assembled. As the case stands, veal from animals two or three weeks old appears to be no more unwholesome than that from calves over three weeks. Further experiments and observations, however, seem desirable.

On the esthetic side legislation is plainly beset with difficulties. Repugnance to the meat of very young animals may or may not be justified. To some people the sight of raw oysters is unpleasant and the swallowing of raw oysters an impossible feat. Fastidiousness with regard to certain articles of diet is not universal. In some parts of Germany the sale of calves' flesh is permitted from eight to ten days after the birth of the animal, and such meat, which would be condemned throughout the United States, finds ready purchasers.

On the economic side it has been urged by Fish and others that a lower limit should be placed as the permissible age for the sale of veal. "The honest farmer who carries on intensive dairying and does not find it profitable to raise all of his calves to maturity must suffer considerable loss. The skin of the calf may perhaps be sold for a dollar or less, but the law prohibits the sale of the carcass for food purposes. Naturally, the farmer infers that the flesh is unwholesome. If the butcher may not be allowed to sell it to the public to eat, the farmer and his family are not likely to consider it a proper food for themselves. The result is that the carcass possessing a certain nutritive value, as far as proteins are concerned, is thrown away or cooked up and served to the swine or poultry for food."

While public health interests must be held paramount to all other considerations, it must be admitted that the unwholesomeness of much of what is now condemned as bob veal needs confirmation. Whatever our prejudices, whatever the traditions of our country or race, we must keep our minds open to new evidence. If through ignorance we have been destroying good and wholesome food, let us recognize the fact and mend our ways. At all events, the matter is sufficiently important from several points of view to require immediate, although thorough and careful, investigation.

1. Is "Bob Veal" Toxic? editorial, THE JOURNAL A. M. A., March 15, 1913, p. 834.
2. Fish: Am. Vet. Rev., 1912, xli, 178.
3. Proc. Am. Vet. Med. Assn., 1912.

VACCINATION FOR AUTUMNAL HAY-FEVER

Dunbar, who was the first to demonstrate that the European or spring variety of hay-fever is caused by the pollen of timothy and other members of the grass family, found that an aqueous extract of the pollen produced congestion and intense irritation when introduced into the eye of a susceptible person. Normal persons are entirely unaffected by such a procedure. Clowes,[1] of the State Institute for the Study of Malignant Disease, at Buffalo, has now observed that sufferers from the American or autumnal form of hay-fever (caused by the pollen of ragweed, goldenrod and other members of the family of the *Compositae*) exhibit a similar sensitiveness when tested with aqueous extracts of ragweed pollen. This reaction is also strictly specific, and only those who suffer from both spring and autumnal hay-fever react to the extracts obtained from both varieties of pollen. The amount of pollen extract required to produce congestion in the eyes of sensitive individuals varies from 0.05 c.c. of a solution of 1 : 500,000 to 0.05 c.c. of a solution of 1 : 500. This test can be utilized quantitatively, and affords a fair index of the measure of immunity or resistance possessed by sensitized persons. Clowes states that a specific cutaneous reaction capable of quantitative application may be obtained by making a slight abrasion of the skin and applying a drop of pollen extract of suitable concentration. A large white welt similar to that resulting from a mosquito-bite or bee-sting accompanied by a distinct itching sensation develops on susceptible persons within fifteen minutes, while normal controls are unaffected. A small dose of pollen extract (1 c.c. of a 1 : 1,000,000 solution for example), injected subcutaneously, produces in highly sensitized persons an itching or prickly sensation followed immediately by considerable swelling at the point of injection and redness extending sometimes over an area of several inches. The injection of a somewhat larger dose (1 c.c. of a 1 : 50,000 solution) caused a considerable swelling and pain, and small blisters resembling hives developed at

1. Clowes, G. H. A.: A Preliminary Communication on Certain Specific Reactions Exhibited by Hay-Fever Cases, Proc. Soc. Exper. Biol. and Med., 1913, x, 69.

the point of injection. This was followed by dizziness and a sense of general discomfort, and a slight attack of hay-fever was precipitated.

An attempt has been made in the Buffalo laboratory[2] to produce immunity against American autumnal hay-fever by vaccination. The extracts employed by Clowes were prepared from the pollen of ragweed by one of the following two procedures: (1) that previously employed by Dunbar, consisting of repeated freezing and thawing in a 5 per cent. aqueous suspension, and (2) an original method, which consists of precipitating the pollen with acetone and extracting with water.

After Dunbar's first attempts to produce active immunization against hay-fever by vaccination with aqueous pollen extract, he abandoned this direct process because of the anaphylactic symptoms obtained, and subsequently resorted to passive procedures. The number of observations by Clowes is still rather too small to permit of broad generalization or final pronouncements. As an index of promise we may quote his statement that all the eight patients treated experienced marked alleviation of general symptoms corresponding very closely with the physical tests.

Specific precipitin and complement-deviation reactions with pollen extracts as antigens were exhibited by certain patients before the commencement of the hay-fever season. These reactions disappeared under treatment, reappearing a few weeks later. There is enough of an encouraging outlook to warrant further investigation. The dosage of the extracts must be regulated with great care, since they are not entirely devoid of dangerous possibilities. The uninitiated need to be warned against any overhasty procedure where so much uncertainty remains.

SOLVING THE MYSTERIES OF TROPICAL DISEASES

Gangosa is a mysterious[3] disease of Guam, which produces serious disfigurement of the nose and adjoining regions of the face. It has sometimes been called rhinopharyngitis mutilans, since the mutilating lesions seemed in most cases to start at the back of the nose or in the soft palate. Mink and McLean[4] described and illustrated this disease in THE JOURNAL in 1906. In a recent number of the *United States Naval Medical Bulletin* — a periodical published for the information of the medical department of the Navy—Kerr[5] discusses the subject further. When an American naval vessel touched at the island about forty years ago, the naval surgeon who saw a number of cases of the disease thought it probably of syphilitic character; but the therapeutic test apparently did not confirm this and the diagnosis was abandoned.

The disease, which was apparently contagious, was common and increasing; the segregation of affected patients therefore seemed wise. A location next to the leper colony was picked out and all the patients, of whom there were several hundred, sent there. After careful and persistent observation and treatment the problem of the character of the disease has been solved. The lesions yield slowly but surely to antisyphilitic treatment when it is given freely and kept up for a long time. The experience should prove of value in the treatment of other refractory syphilids. Ignorant patients cannot be trusted to administer the treatment themselves because they are apt to stop taking it on account of its unpleasantness when they do not see prompt signs of improvement.

Each inmate of the gangosa colony at Ypao was given a mixture containing 15 grains of potassium iodid and 1/15 grain of mercuric chlorid three times a day. This dose was soon increased to two or three times the original amounts according to the age and strength of the patient. After a few months all began to improve. At the end of eight months all active manifestations had subsided. There were some relapses, but these occurred only in patients who neglected to take their medicine regularly; after the imposition of a fine of 25 cents for each dose missed, all recovered promptly once more.

In the meantime in many cases the Wassermann test was found positive and the histories became clearer. Some of the patients were found to have suffered from frambesia in earlier life. This is another of these Pacific Island diseases that has been identified with syphilis and in which a positive Wassermann is found. The results reported by Reed[6] leave no doubt on this subject. The use of salvarsan was found to hasten the cures materially, though the continuance of the mixed treatment and especially of the mercury has been deemed necessary to provide against relapses.

Many of the supposedly tropical diseases, affections thought to be due to the hot, moist climates in which these people live, are turning out to be not mysterious results of climatic conditions, but the consequences of much more concrete and preventable agencies. Syphilis and the animal parasites, the mosquito, the tsetse fly, the filaria and the hookworm account for most of them; thus the problem of prophylaxis becomes much simpler.

It is announced through the United States Public Health Service[7] that there is a gradual reduction of the number of lepers in Hawaii so that the total number of cases is now much below what it was a few years ago. The care given lepers in the leper colony is so satisfactory that a patient pronounced cured and authorized to leave the settlement sometimes asks to be allowed to

2. Clowes, G. H. A.: A Preliminary Communication on the Treatment of Autumnal Hay-Fever by Vaccination with an Aqueous Extract of the Pollen of Ragweed, Proc. Soc. Exper. Biol. and Med., 1913, x, 70.

3. Gangosa is probably the "unknown disease" described by Senn, Nicholas: Travel Notes from South America, THE JOURNAL A. M. A., Jan. 11, 1908, p. 116, cited in the editorial Gangosa, THE JOURNAL A. M. A., Feb. 8, 1908, p. 455.

4. Mink, O. J., and McLean, N. T.: Gangosa, THE JOURNAL A. M. A., Oct. 13, 1906, p. 1166.

5. Kerr, W. M.: Gangosa, U. S. Naval Med. Bull., April, 1913, p. 188.

6. Reed, E. U.: Treatment of Frambesia with Salvarsan, U. S. Naval Med. Bull., April, 1913, p. 188.

7. McCoy, George W.: Care of Lepers in Hawaii, Pub. Health Rep., April 18, 1913, p. 726.

remain. These instances from Guam and Hawaii show what our government is accomplishing for the dependent peoples. In many ways, but particularly in all that concerns the health of the natives, the assumption of authority over them by the United States has been a great blessing. It has saved much in suffering and disease, and there is no doubt that the prospect for the future is even brighter; for it is above all in prophylaxis, now so well understood, that modern sanitary science can accomplish its greatest results.

EXPERIMENTAL EOSINOPHILIA

An increase in the number of eosinophilic leukocytes in the circulating blood occurs in certain diseases, notably those associated with intestinal parasites, and in parasitic diseases of the skin, bronchial asthma, myeloid leukemia and some postfebrile conditions. The cause for this increase and the function of the eosinophil cells are little understood, and the views advanced to account for them have been largely without experimental basis. Recently the production of eosinophilia in animals has brought out some interesting observations. The occurrence of eosinophilia has been noted following the introduction of a foreign protein into a previously sensitized animal. Ahl and Schittenhelm,[1] in experiments in which guinea-pigs were injected with a series of protein substances, found that the resulting reaction was associated with varying degrees of eosinophilia. For example, animals sensitized to albumin, fibrin and globin, when reinjected respectively with these, showed some eosinophilia. Nucleoprotein, histon and caviar peptone gave high eosinophilia, while other protein endproducts, as nucleic acid and protamin, gave almost no increase in eosinophils. These investigators conclude that there is a marked difference in the ability of different protein products to produce eosinophilia, and suggest that this property belongs only to a class of substances with a certain distinctive chemical structure, and that anaphylaxis is not due to a certain, definite, single poison, but to a group of chemically related substances.

Goldschmidt observed that laboratory workers, in dissecting the intestinal parasite *Ascaris*, frequently have attacks of conjunctivitis, coryza, sneezing, cough and asthmatic seizures, and that these attacks increase in severity on repeated contact with the material. These manifestations are accompanied by eosinophilia, and naturally would be explained as anaphylactic phenomena. Opie found that in guinea-pigs eosinophilia follows infection with *Trichinella spiralis*, being marked in cases of mild or medium nature, while in severe and fatal cases the increase is slight, and may be entirely absent. These observations suggest the possibility that the function of the eosinophils is protective and that they are associated with resistance to specific toxins. The fact that eosinophils are often localized in the neighborhood of the foreign protein lends color to this view.

Herrick[2] gives the result of a series of experiments in which he sensitized guinea-pigs with an extract of the bodies of roundworms *(Ascaris lumbricoides)*. When the injections were made at short intervals, as on consecutive or alternate days, no eosinophilia or other special manifestations resulted; but when the injections were made at intervals of from five to twenty-five days there was marked eosinophilia. In no instance did eosinophilia result from a single injection, and in some instances death from acute shock followed the subsequent injections. He found that when the extract was rendered protein-free by precipitation and filtration, no eosinophilia resulted from the introduction of it into previously sensitized guinea-pigs. From these observations he concludes that the substance producing the eosinophilia is a protein, and that experimental eosinophilia is closely connected with anaphylaxis and indicates previous sensitization.

In view of these experiments the occurrence of eosinophilia in bronchial asthma lends additional support to the view now growing in favor, that asthma is an anaphylactic manifestation. There is a tendency to regard other diseases accompanied by eosinophilia in the same light. Evidently this field of investigation is only barely opened, and much remains to be done before the exact relations of eosinophilia and other symptoms of intoxication with protein-split products can be determined.

ENDEMIC GOITER AND RADIO-ACTIVITY

In a recent Bavarian report on the endemic distribution of goiter[3] the conclusion was reached that geologic formation is not the determining or primary factor. The belief was further ventured that the etiologic agent is to be sought in water, which may, of course, be indirectly modified by rock and soil condition. It is said that no less than fifty causes for the occurrence of endemic goiter have been proposed in the literature of medicine. One by one they have been subjected to critical examination and rejected as inadequate or retained for further evidence. Accordingly, from time to time we have referred to the topic,[4] which unquestionably deserves the serious consideration of scientific investigators.

Among the more recent suggestions, radium and radio-active waters aroused consideration as possible etiologic factors in the genesis of goiter several years

1. Ahl and Schittenhelm: Ztschr. f. ges exper. Med., 1913, i, 111

2. Herrick, W. W.: Experimental Eosinophilia with an Extract of an Animal Parasite, Arch. Int. Med., February, 1913, p. 165.

3. Schittenhelm, A., and Weichardt, W.: Der endemische Kropf mit besonderer Berücksichtigung des Vorkommens im Königreich Bayern, J. Springer, Berlin, 1912. See Endemic Goiter, editorial, THE JOURNAL A. M. A., March 8, 1913, p. 751.

4. McCarrison's Researches on Goiter, editorial, THE JOURNAL A. M. A., Aug. 10, 1912, p. 449; Endemic Goiter, editorial, ibid., March 8, 1913, p. 751.

ago. Répin[3] demonstrated that a number of well-known goiter-producing waters of Savoy exhibit radio-activity. There is much in his report that contradicts the direct causal relation between the disease and the radium emanation. Nevertheless the novelty of the subject and the presumable physiologic potency of radio-active substances have kept attention centered more or less on the possibility involved, though it can scarcely be regarded as one of the more widely debated theories of the causation of goiter.

Meanwhile data regarding the distribution of radio-active minerals throughout the world are increasing rapidly. Dr. Hesse of the royal Saxon army has collected the facts and attempted to correlate them with the known incidence of goiter.[4] Inquiry has elicited the fact that goiter is not observed in undue frequency among the chemists who are accustomed to work with the radium minerals and are exposed to atmospheres doubtless charged with quantities of emanation exceeding the therapeutic dosage thousands of times. Attendants and patients at the establishments for radium therapy, such as exist at St. Joachimsthal, do not develop goiter. On the contrary, disappearance of thyroid enlargement has even been reported. Miners particularly exposed to air laden with emanation show no excessive incidence of goiter. To all these suggestive facts may be added the failure of a parallelism between morbidity from goiter and radio-activity of the local water-supplies to manifest itself. This is brought out in an investigation of more than sixty localities by Hesse. There are goiter regions in which no radio-active waters occur. Whatever the relation of water and air may be to goiter, the causal factor must be sought in something other than their radio-active properties. If the etiology of the disease is not elucidated by this statement, at any rate radium is relieved of another of the numerous responsibilities which have so precipitately been thrown on this unique element.

3. Répin: Nouvelles recherches sur la radioactivité des sources goitrigènes, Compt. rend. Acad. d. sc., Aug. 17, 1908; Distribution géographique du goitre en Algérie, Bull. Soc. de path. exot., Paris, May 8, 1912; Les eaux goitrigènes, Rev. d'hyg. et de police sanitaire, 1911, xxxiii, Nos. 4-5; Goitre expérimental, Compt. rend. Acad. d. sc., July 29, 1911.

4. Hesse, E.: Die Beziehungen zwischen Kropfendemie und Radioaktivität, Deutsch. Arch. f. klin. Med., 1913, xc, 338.

Current Comment

HUMAN INDIFFERENCE AND INDUSTRIAL HYGIENE

In a protest against what he terms sensational statements that have lately appeared in the press concerning the poisonous effects of certain trades on workmen, a well-known writer on the chemistry of paints, Mr. Maximilian Toch,[1] refers to a feature which might appropriately be emphasized in relation to most of the larger industries dependent on dangerous processes. This factor is the element of indifference and carelessness on the part of the workmen themselves. The necessity of manufacturing and transporting hazardous materials is an inevitable accompaniment of modern progress. Unquestionably every safeguard should be taken to avoid the possibility of disaster, every precaution applied to prevent the subtle encroaches of unappreciated danger. But when all of this has been done there remains the irresponsive and irresponsible human individual to contend with. The possibility of hedging him in has its limit. There are occupations and activities which can scarcely be rendered absolutely "fool-proof." The limitations of industrial hygiene are thus frequently found in the man himself rather than his industrial environment. Without denying in the least that lead injected or absorbed into the system in any way is exceedingly harmful, Mr. Toch contends that the precautions taken in the white-lead factories of the United States are so great that the plumbism which does result is to a large extent due to the carelessness of the workers themselves. As an illustration of this contention he asserts that it is an almost impossible task to educate illiterate workmen to understand that they must wash their hands before they eat. It is generally agreed by hygienists that in the lead-working industries bathing facilities and washrooms should be at the disposal of the workmen and that they should be forbidden to eat, drink or smoke in the workrooms. Toch states that the government is now distributing circulars printed in various languages notifying workmen that it is illegal for an employer or an employee to permit food to be consumed where white-lead materials are manufactured. The ignorance and indifference of man himself still remain as two of the most formidable barriers to the ideal success of modern preventive medicine and hygienic endeavors.

1. Toch, Maximilian: Lead-Poisoning, Jour. Ind. and Eng. Chem., 1913, v, 434.

FUNCTIONAL HEART-BLOCK

The faulty correlation of the beat of the auricle and ventricle, spoken of as heart-block, is commonly assumed to be due to an organic defect or injury in some portion of the cardiac tissue in which the beat is initiated and the impulse conducted from part to part. Lately instances of possible functional heart-block, that is, the phenomena of the Stokes-Adams syndrome without actual anatomic defects in the auriculoventricular system to account for the complete dissociation between the parts of the heart, have been reported. In one observed case,[1] for example, the patient recovered and the relations between auricles and ventricles became normal so that the proof of the real difficulty could not be ascertained. Oppenheimer and Williams[2] have now described a somewhat similar case in which the heart-block symptoms were followed and electrocardiograms obtained at intervals until the death of the patient. During many months of the period of observation the patient had a pronounced Cheyne-Stokes respiration. The details of the ventricular beat as they exhibit themselves on the modern electrocardiographic records show frequent

1. Cohn, A. E.: Curves from a Case of Transient Complete Heart-Block, Showing Constantly Varying Ventricular Complexes, Proc. Soc. Exper. Biol. and Med., 1911, ix, 24.

2. Oppenheimer, B. S., and Williams, H. B.: Prolonged Complete Heart-Block, without Lesion of the Bundle of His and with Frequent Changes in the Atrioventricular Electrical Complexes, Proc. Soc. Exper. Biol. and Med., 1913, x, 86.

changes. The important finding, however, was the lack of apparent organic lesions when the heart was examined after death. Histologic examination failed to reveal any anatomic defect to account for the block in the auriculonodal junction, the node of Tawara, or the main stem and its branches. The nodal artery was sclerotic. It is unusual to miss structural defects when they are supposed to form the basis for abnormal physiologic behavior. Their absence justifies the inquiry as to whether or not one is dealing with purely functional disturbances in explanation of such unusual instances of complete heart-block.

AN INDEX OF GENERAL NERVOUS CONDITIONS

For more than one reason a reliable index to the general nervous condition of an individual is a desideratum. If a dependable method of judging the state of the nervous system could be devised it would doubtless find a profitable application in the study of abnormal individuals and serve to elucidate neurologic and psychopathic conditions in man. Drs. Grabfield and Martin[1] of the Harvard Medical School have succeeded in measuring the irritability of normal individuals in terms of sensory thresholds for faradic stimulation. The scheme consists in determining the strength of the stimuli required to awaken sensation in the fingers of a hand immersed in a liquid electrode. The results obtained with adult males show a diurnal variation such that there is a period of high irritability between 10 and 11 in the morning, a steadily declining irritability to a minimum at about 4:30 in the afternoon, and a subsequent gain in irritability continuing till the end of the tests at 8:30 in the evening. These variations in irritability agree closely with published observations on the working capacity of muscles and in a general way with data on the varying reaction-time of man. The conclusion is drawn that the daily variation is a central rather than a peripheral phenomenon; probably, therefore, estimations of the sensory threshold by Martin's method will presently find an application in the domain of the pathology of the nervous system. Meanwhile the morning and early evening are marked as the periods of highest activity.

NEW YORK'S ACTION ON THE FRIEDMANN INSTITUTE

An occurrence which, rightly considered, serves to add weight to the demand for governmental investigation of tuberculosis treatments, is the action of the New York City Board of Health in prohibiting treatments of the Friedmann class until they have been investigated. It will be recalled that the plan for exploiting the Friedmann treatment, when the U. S. Public Health Service refused to endorse it, contemplated the preparation of the cultures in each state. Thus, since the product was not to become an article of interstate commerce, the United States Public Health Service would not have jurisdiction over its sale. Its exploitation would be a matter exclusively for local control. The Board of Health of New York City has taken action to prevent administration of living bacterial organisms for the prevention of treatment of disease in the city, until full and complete data regarding preparation, dosage and methods of administration have been submitted to the board, and until the state board has granted permission for the use of such preparation. The first thought which comes to one's mind on reading of this action is the hope that other boards of health, city and state, especially the latter, may feel their responsibility as has the New York City Board of Health. The second thought is the reflection that where no power exists, no responsibility can lodge. Few, if any, boards of health in this country have power to deal with the situation so effectively as has the New York board. In one state the control of serums, vaccines, etc., may be the business of the state board of pharmacy; in another, that of the state department of agriculture; in another, that of the laboratory of the state university; while in still others, there is actually no body legally constituted to cope with the situation. The need for adequate legislation on the subject throughout the country is at once apparent, as is also the need for a central body to aid in correlating all the data and to furnish expert advice to the authorities on whom may fall the responsibility for action.

MEDICAL BOOKS FOR FLOOD SUFFERERS

The wide-spread damage caused by the floods this spring has included all ranks of people, and physicians did not escape. We print in the Correspondence Department of this issue an appeal for gifts of books to replace a practical working and reference library at Dayton, Ohio. At the time of the floods and tornado, the self-reliance and manly independence of physicians throughout Indiana and Ohio, not to mention tornado-swept Omaha, who had lost their homes, equipment and other property in the flood, prevented us from calling for financial aid on their behalf. This proposition to allow the medical men throughout the country to assist the Dayton profession to replace its reference library is a most worthy project. It would be best to make offers of books by letter first and to hold the books until the offer is accepted, so as to avoid duplication. If it were possible as the result of this appeal, approximately to replace this lost library, each book perhaps bearing on its fly-leaf an inscription of the giver, it would make a worthy memorial in Dayton—a testimony to the spirit of brotherly love that exists in our profession.

ANOTHER DENOMINATIONAL ORGAN DROPS NOSTRUMS

Another of the old standbys of the nostrum-maker has thrown off the shackles and will attempt to achieve success without the money received from nostrum advertisers. The *Advance* of Chicago, the great Congregational weekly, has been released from its handicap of many years through changes in the control of the paper. It has passed to other hands and a new board of editors has been appointed. One of the first acts of the new administration has been to throw out nearly the whole line of "patent-medicine" advertisements — retaining only a few of what the publishers may perhaps call

1. Grabfield, G. P., and Martin, E. G.: Variations in the Sensory Threshold for Faradic Stimulation in Normal Human Subjects, Am. Jour. Physiol., 1913, xxxi, 360.

simple home remedies. For a score of years many physicians and others have refused to subscribe to this paper, even though they were Congregationalists and would have otherwise desired to have it in their homes, but the nostrum advertisements debarred it. To offset the loss in revenue, the paper is making an appeal for an increased subscription list, and it deserves the hearty response which we are informed that it is receiving. The new editors are injecting new life and spirit into the pages so that honesty in advertising is not the only means of attracting new subscribers. We wish the *Advance* success.

PRODUCTION OF TUBERCULOUS ANTIBODIES IN CATTLE

Rothe and Bierbaum[1] have published certain results in the immunization of cattle with tubercle bacilli which appear to be of considerable importance to the study of immunity in tuberculosis. They aimed to find a method whereby larger amounts of tuberculous antibodies could be produced. For this purpose they injected cattle intravenously with variously treated tubercle bacilli and products thereof, and it was found that injection of the whole bacilli killed either by prolonged desiccation or by treatment with alcohol gave by far the best results. A single intravenous injection of from 30 to 50 mg. of such bacilli, whether of the human or bovine type, gave a marked and prompt production of antibodies, which usually reached their height on the seventh day to persist into the second month, when a pronounced diminution or even total disappearance would take place. Certain tuberculin preparations had little or no antigenic powers. The antibodies tested were the complement-fixing amboceptor and the precipitin. In their course these two substances appeared to run fairly parallel although not absolutely so. Quite similar results were obtained in the case of horses also. Having established conclusively that antituberculous substances can be produced under these circumstances, the effect of repeated intravenous injections of dead bacilli was tested and the results indicate that a considerable protection against virulent bacilli can be created by this wholly harmless method. Whether or not the serum of animals so treated possesses any real curative powers does not appear to have been determined. Perhaps the most important result of this work so far as immediate availability for practical use is concerned is that by means of this serum, which is rich in tuberculous antisubstances, it may become feasible to test the various tuberculins, of which such a large number are offered for sale, for their actual content in specific derivatives of tubercle bacilli, by means of test-tube methods. For this purpose the specific precipitin test would be especially serviceable. We long have needed some easily applied test of this kind in order to exercise some control of commercial tuberculins, and it now seems that this can be done. The work by Rothe and Bierbaum also has a bearing on the problem of protective inoculation of human beings against tuberculosis in so far as they show that there are methods of killing tubercle bacilli with retention seemingly in large measure of their antigenic power.

1. Rothe and Bierbaum: Ueber die experimentelle Erzeugung von Tuberkulose-Antikörpern beim Rind; zugleich ein Beitrag zur Tuberkulose Immunisierung, Deutsch. med. Wchnschr., 1913, xxxix, 645.

A MILLION DOLLARS FOR MEDICAL EDUCATION

Another large gift to medical education comes in the offer of a million dollars from Mr. Andrew Carnegie for the medical department of Vanderbilt University, Nashville, Tenn.[1] A condition of the donation provides that the direction of the educational and scientific work of the department shall be committed by the board of trustees to a small board of seven members, three of whom are to be eminent in medical and scientific work. It is said that the offer has already been accepted by the executive committee of the board of trustees and that this action comes before the whole board for ratification June 16. No medical school in this country is more deserving of good fortune than is the medical department of Vanderbilt University, since the school, in spite of having to contend against obstacles probably greater than those which have confronted any other school, has always been an ardent champion of reasonably high standards of preliminary and medical education. Located as the university is in the state which at present has the weakest legal requirements regulating the practice of medicine, the gift, if accepted will have a beneficial effect on medical education not only in Tennessee but also in the entire South.

Medical News

ALABAMA

New Officers.—Annual meeting of the University of Alabama School of Medicine Alumni Association, held in Mobile, May 21: president, Dr. Angelo Festorazzi, Mobile; secretary-treasurer, Dr. P. J. Howard, Mobile.

Personal.—Dr. P. J. M. Acker, Mobile, has been appointed surgeon of the Mobile Light and Railroad Company, vice Dr. W. G. Ward, deceased.——Drs. J. T. Searcy, Tuscaloosa, and G. T. McWhorter, Riverton, were elected vice-presidents of the American Sociologic Congress at its meeting in Birmingham, April 24.

Building for Professional Men in Birmingham.—Plans have been completed for the proposed Hygeia building, a nine-story structure to be erected on Ninth Avenue, between Twentieth and Twenty-First Streets, Birmingham, for the use of physicians and dentists. The top floor is to be used for an auditorium, the use of which is to be given to the Jefferson County Medical Society free of expense.

ARIZONA

Personal.—Dr. William A. Holt, Globe, who has been in serious condition in Mercy Hospital, Chicago, as the result of septicemia following an operation wound, is reported improving.——Dr. H. E. Crepin has been appointed health officer of Tucson.

New Officers for State Association.—At the annual meeting of the Arizona Medical Association held in Globe, May 19-21, Tucson was selected as the next meeting place and the following officers were elected: president, Dr. Ira E. Huffman, Tucson; vice-presidents, Drs. J. W. Flinn, Prescott, E. B. Ketcherside, Yuma, and R. Ferguson, Bisbee; secretary, Dr. C. E. Yount, Prescott; delegate to the American Medical Association, Dr. J. E. Bacon, Miami. The association voted to continue the publication of the *Arizona Medical Journal*. Drs. Charles T. Sturgeon and R. D. Kennedy, Globe, were indorsed as candidates for the vacancy on the State Board of Medical Examiners caused by the resignation of Dr. William A. Holt, Globe.

ARKANSAS

Women Physicians Organize.—Women physicians of Arkansas met in Little Rock May 20, on the occasion of the State Medical Society meeting, and organized the Woman's Medical

1. See Medical News, Tennessee, this issue.

Club of Arkansas, electing Dr. Olive Wilson, Paragould, president; Drs. Elzora Butler Allen, Wye, and Irene Tatman, Eureka Springs, vice-presidents, and Dr. Ida J. Brooks, Little Rock, secretary-treasurer.

State Board Appointments.—The following have been appointed members of the State Medical Board of the Arkansas Medical Society: second district, Dr. T. J. Stout, Brinkley, vice Dr. F. T. Murphy, Brinkley; third district, Dr. E. F. Ellis, Fayetteville, vice Dr. F. B. Young, Springdale, recently elected president of the State Board of Health; sixth district, Dr. W. S. Stewart, Pine Bluff, to succeed himself, and seventh district, Dr. J. C. Wallis, Arkadelphia.

Dr. Murphy Presented with Loving-Cup.—At the recent meeting of the State Medical Board of the Arkansas Medical Society in Little Rock, May 23, Dr. F. T. Murphy, Brinkley, secretary of the board, was presented with a handsome silver loving-cup by his fellow members of the board as a token of regard and esteem. Dr. Murphy retired from the secretaryship under the rules governing the State Medical Society, which provide that no one person can fill an office for more than eight years.

State Society Meeting.—The annual meeting of the Arkansas Medical Society held in Little Rock, May 20-23, is said to have been the most successful in the history of the organization. Six additional counties were reported to have been organized during the year, and an increase of 15 per cent. in membership was announced. It was decided that non-graduates should be denied admission to county and state medical societies. The following officers were elected: president, Dr. F. B. Young, Springdale; vice-presidents, Drs. L. E. Moore, Searcy, S. L. Steer, Hot Springs, and F. G. Richardson, Heber Springs; secretary, Dr. C. P. Meriwether, Little Rock (reelected); treasurer and editor of the State Journal, Dr. W. R. Bathurst, Little Rock (reelected); councilors, Dr. M. C. Hughey, Rector, first district (reelected); Dr. T. B. Bradford, Cotton Plant, third district (reelected); Dr. J. S. Rinehart, Camden, fifth district and secretary; Dr. John F. Rowlan, Hot Springs, eighth district; Dr. W. A. Snodgrass, Little Rock, (holdover) chairman, and Dr. A. M. Hathcock, Harrison, ninth district; delegates to the American Medical Association, Drs. Morgan Smith, Little Rock, and W. V. Laws, Hot Springs; alternates, Drs. Carle E. Bentley, Little Rock, and A. U. Williams, Hot Springs; section officers—practice of medicine, Dr. C. J. March, Fordyce, chairman, Dr. S. J. McGraw, Eldorado, secretary; surgery, Dr. C. S. Holt, Fort Smith, chairman, and Dr. Earle H. Hunt, Clarksville, secretary; obstetrics and gynecology, Dr. R. L. Saxon, Little Rock, chairman, and Dr. O. D. Ward, England, secretary; pathology, Dr. F. B. Kirby, Harrison, chairman, and Dr. L. O. Thompson, Little Rock, secretary; state medicine and public hygiene, Dr. J. L. Greene, Little Rock, chairman, and Dr. C. W. Garrison, Little Rock, secretary; dermatology and syphilology, Dr. J. L. Chesnutt, Hot Springs, chairman, and Dr. J. M. Proctor, Hot Springs, secretary; diseases of children, Dr. N. E. Murphy, Clarendon, chairman, and Dr. A. R. Hederick, Booneville, secretary. It was decided to hold the next annual meeting at Eldorado. The president, in his annual address, referred to the sacred mission of the physician, congratulated the profession on the recently enacted bill providing for a State Board of Health, and bespoke the hearty cooperation of every member of the society in the work of sanitation, prophylaxis and vital statistics that has been inaugurated.

CALIFORNIA

New Officers.—Orange County Medical Association at Orange, May 13: president, Dr. H. A. Johnston, Anaheim; secretary, Dr. Welch, Santa Ana.

Building for Physicians.—A seven-story building is being constructed in San Diego for the especial use of physicians and dentists. The building is to be of reinforced concrete and fire-proof.

Million for Research Bureau.—Mrs. George William Hooper, San Francisco, is said to have transferred to the University of California, $1,000,000 for the establishment of an institute of medical research. The foundation is to be controlled by an advisory board of seven members, consisting of the president of the Carnegie Institute, the professor of pathology at Johns Hopkins University, the director of the Rockefeller Institute for Medical Research, the president and dean of the medical school of the University of California, a representative of the donor and a member to be chosen by the western members of the advisory board.

Promotions and Appointments.—The following promotions and new appointments have been made in the Stanford University Medical Department: Dr. Thomas Addis has been promoted to associate professor of medicine, Dr. E. C. Dickson and Dr. W. W. Boardman have been made assistant professors of medicine, Dr. Leo Eloesser and Dr. F. E. Blaisdell have been made assistant professors of surgery. Dr. R. G. Brodrick has been appointed assistant clinical professor of hygiene and public health. Dr. W. F. Schaller has been made assistant clinical professor of medicine, assigned to neurology, and Dr. J. M. Wolfsohn clinical instructor in medicine assigned to neurology. Dr. A. A. O'Neill has been promoted to clinical instructor in medicine and Dr. G. A. Rothganger has been appointed clinical instructor in surgery.

CONNECTICUT

State Society Meeting.—At the annual meeting of the Connecticut State Medical Society held in Hartford, May 21-22, the following officers were elected: president, Dr. D. Chester Brown, Danbury; vice-presidents, Drs. W. S. Hulbert, Winsted, and Kate C. H. Mead, Middletown; secretary, Dr. M. M. Scarbrough, New Haven, and treasurer, Dr. Joseph H. Townsend, New Haven.

Personal.—Dr. and Mrs. Morris Tuch, Hartford, have returned from abroad.——Drs. Robert S. Starr, James F. Rooney, D. J. Molumphy and D. W. Tracy have been reappointed medical inspectors of the health board of Hartford, and Dr. Arthur J. Wolff has been reappointed bacteriologist.——Dr. Edward Carter Perkins, Hartford, sailed for China, recently. He has purchased a site in Giu Giang on which he is to build a men's hospital of which he will be superintendent and which will be operated under the Methodist Episcopal Mission Board.

ILLINOIS

Personal.—Dr. R. S. Gazelle, formerly a practicing physician at Armington, has been appointed first lieutenant in the Medical Corps of the Egyptian Army and is stationed at Port Bruce, Sudan.——Dr. Elizabeth B. Ball, Quincy, secretary of the Adams County Medical Society, sailed for Europe, May 31. Dr. D. G. Stine, Quincy, will act as secretary during her absence.——Dr. E. L. Mitchell has been elected vice-president and Dr. Ralph Graham, secretary, of the Monmouth Hospital Association.——Dr. Samuel M. Green, Dixon, charged with being responsible for the death of a Milledgeville girl, has been acquitted.——Dr. B. H. King, health commissioner of Granite City, has resigned.——Dr. and Mrs. E. K. Lockwood, Virden, have returned from Europe.——The office and residence of Dr. John W. Botkin, Virden, was burned to the ground, May 12.——Dr. G. W. Fockler, Delavan, entertained a number of his brother practitioners at a dinner, May 11, in honor of his fiftieth birthday anniversary.

Chicago

Personal.—Drs. Isaac A. Abt, Ernest Lackner and Julius H. Hess have been appointed attending medical staff of the Sarah Morris Hospital for Children, and Drs. Mark Jampolis, Albert H. Beifeld and Jesse R. Gerstley, associate medical staff.——Dr. John D. McGregor, city physician, was the guest of honor at a banquet March 22.

KENTUCKY

Hospital Sold.—Drs. J. N. McCormack and Lillian H. South, Bowling Green, have sold St. Joseph's Hospital to Dr. T. O. Helm, Bowling Green.

Tuberculosis Ward in State Reformatory.—The Prison Commission has instructed the warden of the State Reformatory to have plans drawn for a tuberculosis ward to be erected in the prison yard.

County Sanatorium.—The Lexington Board of Health has indicated its willingness to cooperate with the Fayette County Medical Society and the Fayette Tuberculosis Association in the movement for the establishment of a tuberculosis sanatorium for Lexington and Fayette County.

State Board and Tuberculosis.—At a joint meeting of the State Board of Health and State Tuberculosis Commission held in Frankfort, May 7, a committee was appointed to outline and plan for a cooperative campaign against tuberculosis. The committee consists of Dr. J. N. McCormack, secretary of the State Board of Health, Dr. C. A. Fish, Frankfort, and Dr. C. Z. Aud, Cecilian, for the State Board, and Drs. U. V. Williams and H. S. Keller, Frankfort, Dr. R. T. Yoe, Louisville, and Dr. E. Morris, Sulphur, for the commission, which will meet in Louisville at the call of Dr. McCormack.

MINNESOTA

Resolutions Regarding Dr. Bjelland.—At the last regular meeting of the Blue Earth County Medical Society, memorial resolutions regarding the late Dr. Adolph Odin Bjelland, Mankato, were read by Dr. Helen Hughes Hielscher and adopted by the society.

Personal.—Dr. Willard P. Greene, physician in charge of the White Earth Agency, has been appointed epidemiologist of the State Board of Health.——Dr. I. J. Murphy has been reappointed assistant health commissioner and epidemiologist of the Department of Health of Duluth.

Sanatorium Notes.—There are now about one hundred patients at the State Sanatorium for Tuberculosis, Walker, and improvements are in progress which will cost about $200,000 and which will increase the capacity of the institution to 180.——The new tuberculosis sanatorium for St. Paul and Ramsey County will be constructed according to the original plans on the grounds of the City and County Hospital at a cost of $100,000, of which the state and county each pays one-half.

NEW JERSEY

Camden's Hospital Fund.—Within two days of the close of the campaign to raise $100,000 for the West Jersey Homeopathic Hospital, $46,000 had been secured.

Small-Pox in Stockton.—The State Board of Health began, May 26, an investigation of an outbreak of small-pox in the borough of Stockton, Hunterdon County.

Ice Cream Sellers Warned.—May 26, Dr. B. H. Warren, chief food inspector of Atlantic City, filed notice with nine of the seventeen ice cream manufacturers giving them twenty-four hours to place their factories in sanitary condition. Licenses for the ensuing year were issued May 27.

Hospital News.—Bergen County is to have a tuberculosis hospital to cost about $175,000.——The Weeks Memorial Hospital at the New Jersey State Village for Epileptics, Skillman, was dedicated recently. The hospital is named in honor of the late Henry M. Weeks, Trenton, first superintendent of the village.——The city of Camden has been authorized to issue bonds amounting to $25,000 to raise funds for the furnishing of the new Camden Municipal Hospital.——In the campaign held in Orange, recently, to raise $150,000 or more for the Orange Memorial and New Jersey Orthopedic hospitals, the pledges during the twelve days of the campaign exceeded by $15,000 the amount it was desired to raise.——A tract of land 100 by 150 feet on Rutherford Avenue, Trenton, has been given to Mercer Hospital by W. S. Hancock, president of the board.

NEW YORK

Medical Club Organized.—Physicians of Albany have organized the Harvey Medical Club and elected Dr. J. B. Congdon, president, and Dr. William F. Conway, secretary-treasurer.

Personal.—Dr. L. L. Wiles, Amsterdam, who has been ill with septicemia due to an operation wound, has recovered.——Dr. John Gerrin, physician at the Auburn State Prison, has resigned.

Research Laboratory at Otisville Sanatorium.—At a meeting of the Board of Health held Jan. 31, 1913, a resolution was adopted requesting the consent of the Board of Estimate and Apportionment to the expenditure of a sum not exceeding $16,000 from funds at the disposal of the Board of Health from the sale of vaccine virus and surplus bacteriologic products, to enable the department to establish a branch of its present Research Laboratory on the grounds of the Municipal Sanatorium for Tuberculosis at Otisville, Orange County. The objects sought by such a laboratory are the routine examinations incident to caring for the 600 patients in the institution at Otisville; the pursuit of special research work, the pathologic and bacteriologic work in connection with the production of vaccine and antitoxin serums; the study of the diseases of animals in connection with and affecting these products, and investigations having in view the more economical production of the various bacteriologic products and their wider and more practical ultilization in the prevention and treatment of contagious diseases. At a meeting of the Board of Estimate and Apportionment on April 24, the Board of Health was empowered to expend $12,757 during the nine months beginning April 1.

New York City

Must Take Typhoid Vaccine.—All nurses, members of the house staff, orderlies, laundresses and attendants in Mount Sinai Hospital will be immunized against typhoid by vaccine. For some time past immunization has been voluntary and few availed themselves of it.

New Flower Hospital.—The cornerstone of the new building for Flower Hospital was laid at the corner of Eastern Boulevard and Sixty-Sixth Street on May 28. On this occasion lantern slides of the new building as it will appear when completed were shown. It is announced that the hospital will continue its ambulance service, which is the largest of any private hospital in the city.

Personal.—Dr. and Mrs. L. E. La Fetra have sailed for Europe.——Dr. Ludwig Weiss has been appointed consulting dermatologist to St. Mark's Hospital.——Dr. Mary V. Glenton, formerly of New York City, a medical missionary in charge of the Elizabeth Bunn Memorial Hospital, Wu Chang, China, reached New York, May 19.——Dr. Oscar M. Schloss has succeeded Dr. Ira S. Wile as conference physician at the Riverside Kitchen of the New York Diet Kitchen Association.

OHIO

Personal.—Dr. C. H. Humphreys, Dayton, was operated on in Leeds, England, recently for the removal of an infected gall-bladder.

Cincinnati

Personal.—Dr. A. C. Bachmeyer, assistant superintendent of the Cincinnati Hospital, has resigned.

Dr. Woolley Resigns.—Dr. Paul G. Woolley, dean of the Medical Department of the University of Cincinnati, has resigned, but retains his professorship.

PENNSYLVANIA

Anti-Vaccination Bill Defeated.—On May 28, the bill to amend the vaccination law so that vaccination should be required only in time of outbreaks of small-pox was defeated in the house.

Small-Pox.—Six cases of small-pox have been reported to the State Department of Health from Salisbury township, adjacent to Bethlehem, and two cases from Fountain Hill Borough, adjoining South Bethlehem. These communities are the homes of many of the employees of the Bethlehem Steel Works. All employees will be vaccinated. The county medical inspectors and the local health authorities in Bethlehem, South Bethlehem, Allentown and Fountain Hill are urging all persons not vaccinated within five years to be vaccinated.——A case of small-pox was discovered on the United States Battleship *Wisconsin*, at the Philadelphia Navy Yard, May 29. The vessel was placed under quarantine until the officers and members of the crew, 300 persons, were vaccinated.——Owing to the discovery of five small-pox cases in two houses on Darien Street near Columbia Avenue, Philadelphia, May 31, a wholesale quarantine of the district was established.

Philadelphia

Charter Granted Clinical Society.—The Clinical Society of Philadelphia, which has been planning to establish a scientifically constructed and arranged building where lectures and demonstrations may be held, has been granted a charter. One was also issued to the American Society for Physicians' Study Travels.

Mortality Records Low.—Mortality records for the week ending May 31 show that Philadelphia is steadily maintaining the high standard attained last year of being one of the healthiest of the larger cities. The deaths for the week were 436, or a mortality rate of 13.89 per thousand of population as compared with 15.22 for the entire twelve months of 1912.

SOUTH DAKOTA

New State Society Officers.—At the annual meeting of the South Dakota State Medical Association, held in Vermillion, May 27-29, the following officers were elected: president, Dr. Fred A. Spafford, Flandreau; vice-presidents, Drs. Fred Treon, Chamberlain, and J. B. Vaughn, Castlewood; secretary-treasurer, Dr. R. D. Alway, Aberdeen (reelected); councilors, Drs. H. T. Kenney, Pierre, and T. J. Billion, Sioux Falls.

TENNESSEE

Sanatorium Ready.—The new Chattanooga Tuberculosis Sanatorium is practically ready for occupancy. It is located in Hill City and has been erected at a cost of about $75,000. It consists of a main administration building, two stories in height, and four cottages. The sanatorium will be under the direct charge of the Chattanooga Tuberculosis Society.——A new ward has been opened at the Nashville City Hospital especially fitted up for infants and children, with accommodation for eighteen patients.

A Million for Vanderbilt.—It has just been announced that Mr. Andrew Carnegie has offered to donate to Vanderbilt University one million dollars for the development of its medical department. Of this sum $200,000 is intended to be given at once for the erection and equipment of laboratories, while the remaining $800,000 will be given as an endowment, the income from which will be paid annually for the support of the medical department. This is the largest single gift ever given to the university.

Tennessee Physicians Elect.—Twenty-second annual meeting of the West Tennessee Medical and Surgical Association, held in Jackson, May 9: president, Dr. J. R. Carroll, Henderson; secretary-treasurer, Dr. I. A. McSwain, Paris. Union City was chosen as the meeting place for 1914.——Annual meeting of the Middle Tennessee Medical Association, held in Dickson, May 15: president, Dr. T. J. Coble, Shelbyville; secretary-treasurer, Dr. R. W. Billington, Nashville. Columbia was selected as the next place of meeting.

TEXAS

Personal.—Dr. C. F. Hays, Fort Worth, has been appointed assistant city physician.——Dr. I. L. McGlasson, Waco, sailed from Galveston for Liverpool, May 7.

Hospital for Babies.—The outdoor hospital annex to the Physicians' and Surgeons' Hospital, San Antonio, opened May 6. The annex is in charge of Miss M. M. Taylor.

Tuberculosis Camp Established.—Harris County has established a tuberculosis camp on the County Poor Farm, south of Houston. The building is on the dormitory plan and has accommodation for twenty-four patients. It is provided with dormitories for men and for women and a refectory and extensive open-air sleeping-porches.

Ex-Presidents' Meeting.—At the annual meeting and banquet of the Association of Ex-Presidents of the State Medical Association of Texas, held in San Antonio, May 8, the following officers were elected: president, Dr. J. D. Osborne, Cleburne; vice-presidents, Drs. Bacon Saunders, Fort Worth, and J. C. Loggins, Ennis; secretary, Dr. H. W. Cummings, Hearne, and historian, Dr. Frank Paschal, San Antonio.

New Officers.—Fayette County Medical Society organized at Lagrange, May 3: president, Dr. C. J. Schramm, Fayetteville; secretary-treasurer, Dr. Charles M. Hoch, Lagrange.——Hays County Medical Society reorganized at San Marcos, April 30: president, Dr. J. R. de Steigner; secretary-treasurer, Dr. E. T. Powell, both of San Marcos.——Frisco-Central Medical Society, thirteenth semi-annual meeting at Dublin, April 30: president, Dr. H. L. Wilder, Glen Rose; secretary, Dr. J. H. Gandy, Lipan.——Dallas County Medical Society at Dallas, May 19: president, A. W. Nash; secretary, J. W. Loving.

Charity Hospital for Houston.—A meeting was called by the Harris County Medical Society in Houston, May 19, to discuss the proposed building of a charity hospital. Invitations were sent to the civic organizations of Houston. It is proposed that a bond election be called for $150,000 for the establishment of a charity hospital. A committee was appointed, consisting of Dr. A. P. Howard, chairman, Dr. O. L. Norsworthy, Mrs. W. B. Sharp, Mr. C. R. Wharton, Rev. Peter Gray Sears, Mr. H. T. Warner and Mr. E. C. Griscom, to promote the establishment of a municipally-owned hospital and clinic.

WEST VIRGINIA

New Officers.—Marshall County Medical Society, May 13: president, Dr. L. H. McCuskey; secretary, Dr. C. G. Morgan, both of Moundsville.

Personal.—Dr. W. P. Megrail, Wheeling, who has been seriously ill with septicemia, is reported to be convalescent.——Dr. B. M. Spurr has completed arrangements for the building of an addition to the Sheltering Arms Miners' Hospital, Hansford. It will cost about $15,000.

State Association Meeting.—The annual meeting of the West Virginia State Medical Association was held in Charleston, May 21-23, and the following officers were elected: president, Dr. R. E. Venning, Charlestown; vice-presidents, Drs. C. M. Scott, Bluefield, F. B. Murphy, Philippi, and J. E. Cooper, Cameron; secretary, Dr. A. P. Butt, Davis, and treasurer, Dr. H. G. Nicholson, Charleston.

Good Health Work.—Dr. Harriet B. Jones, Wheeling, has taken up active work with the tuberculosis exhibit of the state. A car has been presented by the Baltimore and Ohio Railroad and free transportation has been given over all railroads in the state. It is the intention of Dr. Jones to pass through every county in the state and several places in the county, giving lectures on tuberculosis. The legislature has appropriated $9,900 for the expenses. Dr. Thurmon Gillespy will accompany the tuberculosis car and deliver lectures, en route.

GENERAL

Medico-Psychologists to Meet.—The sixty-ninth annual meeting of the American Medico-Psychological Association will be held at the Clifton Hotel, Niagara Falls, June 10-13, under the presidency of Dr. James T. Searcy, Tuscaloosa, Ala.

Albany Alumni at Minneapolis.—Among the alumni gatherings at the Minneapolis session of the American Medical Association Tuesday, June 17, will be a meeting of the graduates of Albany Medical College at the Hotel Radisson, at 5 p. m.

Frisco Surgeons Meet.—The Frisco System Medical Association held its twelfth annual meeting in Oklahoma City, Okla., May 26-27 and elected the following officers: Dr. J. R. Dawson, Birmingham, Ala., president; Drs. C. M. Lutterloh, Jonesboro, Ark., and J. D. Osborn, Frederick, Okla., vice-presidents; F. E. Chalmont, St. Louis, secretary (reelected), and Dr. W. A. Camp, Springfield, Mo., treasurer (reelected). Birmingham was selected as the next place of meeting.

Prize for Means to Cure Typhoid Carriers.—The medical press of the world is asked to spread the news that a prize of $2,500 will be awarded in Germany to the person of any nationality who can devise a means by which typhoid carriers can be freed from the bacilli and the stools and urine remain free from them for at least half a year after treatment. The jury to award the prize consists of Ehrlich, Gaffky, Uhlenhuth, Kraus and Hoffmann besides the surgeon-general of the army. The description of the method offered in competition must be in German and be in the hands of the jury before October, 1914.

Government Loses Steamship Suit.—In the case of the Holland-America Steamship line which sued the United States for $2,167.80, paid for medical treatment of aliens brought to this country and held at Ellis Island on account of some temporary contagious disease, the Federal District Court held that there was nothing in the law to compel the treatment of aliens aboard a ship when the government had proper facilities, such as Ellis Island, for their treatment. Steamship companies, it was decided, are liable for the care and maintenance of sick aliens only when they are brought to this country through negligence, the company knowing that they are suffering from contagious diseases. The government's attorneys argued that the government had the right to compel the steamship company to keep sick passengers aboard ship and that their removal was assented to only after the steamship company had practically consented to pay their expense. Judge Mayer considered that this might mean injustice to the other passengers and shippers if contagious sickness appeared, and ruled against the government.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, May 24, 1913.

International Medical Congress

As stated before, the membership subscription to the International Medical Congress is sufficient only to cover the expense of publishing the transactions. A subscription list for private donations has therefore been opened to meet the expenses of the congress, which it is expected will be attended by 7,000 persons. A large sum has already been subscribed by about 600 leading physicians; the individual subscriptions vary from $5 up to $1,000; but a further sum of $12,500 is required to meet the necessary expenditure. Elaborate preparations are being made for the entertainment of the members, and private hospitality will be extended to them by the king and many prominent men, the medical corporation and some of the city livery companies.

Particulars have already been given with regard to the sections of medicine and surgery, and some may now be added with regard to the section of physiology. The president is E. A. Schäfer. There are three set discussions. The one which appears to be exciting most interest is on the internal secretions, which will be held jointly with the section of medicine. The reporters in this discussion are Gley of Paris and Biedl of Strasburg. To introduce this subject a discussion on endogenous protein metabolism, to be held in conjunction with the subsection of chemical pathology, will be introduced by Abderhalden, H. D. Dakin and G. Embden.

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The third discussion will be confined to the section of physiology and will deal with the question of reciprocal innervation; it will be introduced by Sherrington and Max Vernon. Perhaps the most interesting meetings of this section will be three laboratory meetings, at which demonstrations will be given. These will be held in the physiologic laboratories of the University of London, University College, London, and King's College, London, respectively.

ARRANGEMENTS FOR SOCIAL FUNCTIONS

In spite of the large number expected to attend the International Medical Congress, so much hospitality has been proffered that it has been necessary to refuse many invitations. With comparatively few exceptions arrangements have been made for the entertainments to be conducted on a private basis. After the formal opening of the congress by Prince Arthur of Connaught at 11 a. m. Wednesday, August 6, arrangements have been made for a government dinner, at which 500 guests of the congress will be entertained. The king, acting as patron, has invited 2,000 members to attend a garden party at Windsor, Saturday, August 9. During the week, probably on Friday, a congress soirée will take place at the Natural History Museum. For the most part the dinners which have been arranged are sectional, but the president is to entertain 100 of the leading members of the congress at a dinner, August 11. Lord Strathcona has also promised hospitality on an extensive scale. Among the luncheons is to be one at the Royal Free Hospital and another at St. Bartholomew's Hospital. Garden parties are to be given by the Bethlem Royal Hospital, by the dean of faculty of medicine of the University of London, by St. Bartholomew's Hospital and by Mr. Waldorf Astor. There is to be a Masonic meeting on the afternoon of Monday, August 11, and excursions have been arranged to Brighton, Harrogate, Stratford-on-Avon, Oxford, Cambridge and Bath. Tuesday, August 12, a dinner will be given by the Apothecaries' Society, and on the same evening receptions have been arranged at the Royal College of Surgeons, at the Royal Society of Medicine, at the Royal Army Medical College, at University College, Hospital Medical School and at the Grocers' Company. Sir William Lever is also to give an entertainment.

To relieve the difficulties of organization, much of the work of entertainment is being distributed among the sections. The various London committees include most of the leading medical men in London, and arrangements have been made to insure that all those who attend the congress shall be entertained privately. The business of the various sections will be conducted both in the morning and in the afternoon, but as it is the common experience of congresses that members attend only a part of the sessions, excursions are being arranged day by day to various places of interest in London. Many of the sections have already arranged to hold sectional dinners and to attend special soirées. Among the morning and afternoon engagements the surgical section is to visit the Barbers' Hall (it may be remembered that in the middle ages the functions of barber and surgeon were combined in the "barber surgeons") and to attend garden parties at Cambridge and Henley. The section of children's diseases will visit the Cripples' Home at Alton, and the section of psychiatry is to inspect Claybury Asylum, and on Wednesday, August 13, will pay a visit to Cardiff. The president of the section of stomatology is to give a garden party, and the section of laryngology and otology has been invited to Oxford.

National Association for Prevention of Infant Mortality

This association has made arrangements to hold an English-speaking conference on infant mortality at Caxton Hall, Westminster, London, August 4 and 5, the two days preceding the opening of the International Medical Congress. It is under the immediate patronage of the king and queen and will be presided over by Mr. John Burns. Lady Aberdeen, Mr. Pease, Sir George Newman and Dr. Arthur Newsholme are among the chairmen of the various sessions into which the two sections — administrative and medical — are divided. Papers will be read by experts from the United Kingdom, the United States and the colonies on many aspects of the following questions: The responsibility of central and local authorities in the matter of infant and child hygiene; the necessity for special education in infant hygiene; medical milk problems; the administrative control of the milk-supply, and antenatal hygiene. The United States and a large number of colonial governments will be officially represented and the attendance generally promises to be large. The British railways and steamship companies with services to the colonies and to the United States have all granted special traveling facilities, particulars of which are set forth in the detailed program, which may now be obtained from the secretary of the National Association for the Prevention of Infant Mortality, at 4 Tavistock Square, London, W. C. The subscription for membership is $5. The corporations of Liverpool and Glasgow have each given a donation of $250 toward the expenses of the conference, that of London has given $125, and many other towns are sending smaller sums in proportion to their population.

Annual Meeting of the British Medical Association

The eighty-first annual meeting of the British Medical Association will be held at Brighton, July 22-25. Sixteen sections have been arranged. Some of the more important papers may be mentioned. In the section of bacteriology and pathology the papers will include one by Dr. Miller Galt on "The Value of the Blood-Count in Obscure Bacterial Infections," and an account by the staff of the John Howard McFadden Research Fund on "Some Researches on the Jelly Method of Staining Cells Alive." A joint discussion has been arranged with the section on pharmacology on "Anaphylaxis," the papers promised including a consideration of "The Action of Asbestos and other Finely-Divided Substances on Various Physiologic Substances." In the section of climatology and balneology there will be discussions on "Sea Bathing," to be opened by Dr. W. J. Tyson, and on "The International Aspects of British Health Resorts," to be opened by Dr. Neville Wood. In the section of diseases of children, Dr. E. J. Poynton and Dr. Carey Coombs will initiate a debate on the "Affections of the Heart in Childhood." In the section of electrotherapeutics papers and discussions have been arranged on "Roentgen Diagnosis," on "Electrodiagnosis and Electrotherapeutics" and on "Roentgen Therapy and Radium." The subjects chosen for discussion in the section of medical sociology are "Crime and Punishment" on which Dr. Charles Mercier, Sir Bryan Donkin and Dr. James Scott will read papers, and on "Hospitals in Relation to the Stage, the Public and the Medical Profession," in which Sir Henry Burdett and Dr. I. G. Gibbons will read papers. The discussion will, it is hoped, prove valuable in helping to elucidate the problems involved in providing hospital accommodation for insured persons under the national insurance act. A discussion on "Eugenics" will be introduced by Professor Bateson, to be followed by Dr. Stewart Mackintosh, and Mr. Benedict Davenport of New York. The arrangements for the navy, army and ambulance sections include a paper by Major Birrell on "Notes on the Work of a British Red Cross Unit with the Bulgarians."

PARIS LETTER

(From Our Regular Correspondent)

PARIS, May 16, 1913.

Personal

During the session of May 13, the Académie de médecine elected a member of the section of operative medicine to replace Professor Segond, who died last October. Dr. Bazy, surgeon of the hospitals of Paris, who is especially well known through his works on diseases of the urinary passages, was elected.

Dr. Théophile Anger, formerly surgeon of the hospitals of Paris, has died, aged 77. He was on the staff of Napoleon III during the war of 1870, in which he took an active part. He has left few written works, but he formerly was a very active surgeon. He brought into notice an autoplastic procedure for the cure of hypospadias and epispadias. He was also much interested in advanced cystotomy procedures and he was the first to call attention to hypogastric cystotomy. He applied to the reduction of luxations the method of elastic traction by large rubber tubing, and devised a number of ingenious apparatus for club-foot and for coxalgic deformities.

Tuberculosis and the Brushing of Clothes

Professor Letulle read before the Académie de médecine, May 13, a report by Dr. Chaussé, who showed experimentally that brushing clothes soiled with dried tuberculous sputum set in motion respirable, virulent particles. Chaussé exposed guinea-pigs to powder caused by the brushing of such clothes. He states that he used clothes the sputum on which was of different ages; all the guinea-pigs were infected by that dating from the second and fourth days; but the number of infections diminished in proportion as the sputum became more and more dry. The danger, however, was not completely over at the end of fifteen days, a fact which was shown by an infection from sputum sixteen days old.

The Future Permanent Secretary of the Academy of Medicine

The Académie de médecine will soon elect a permanent secretary to replace Professor Jaccoud. It is believed that Professor Debove, formerly dean of the Faculté de médecine de Paris, will be elected. The new permanent secretary will be the eighth since the foundation of the academy by Louis XVIII. His predecessors were: Pariset from 1822 to 1827; Adelon from 1828 to 1830; Pariset from 1831 to 1847; Frédéric Dubois from 1847 to 1873; Béclard from 1873 to 1887; Bergeron from 1887 to 1900; Jaccoud from 1901 to 1913.

Mutual Aid Society for Wives and Children of Physicians

A Société de secours mutuels et de retraites pour femmes et enfants de médecins has just been founded in Paris under the patronage of the Association générale de prévoyance et de secours mutuels des médecins de France. Its aim is to give assistance in the form of pensions, etc., to its members in old age, disease or infirmity.

A Municipal Secret Maternity Hospital

In order to avoid child murder, which is becoming more and more frequent, the city of Toulouse has founded a secret maternity hospital. Any woman about to become a mother can enter this hospital without revealing her name. After delivery she may go out as she has come in, keeping her incognito. She is compelled to deposit in a sealed envelope the information in regard to her identity, necessary to make the legal declaration in case of her death, but this envelope is returned to her at her departure.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, May 2, 1913.

Personal

Von Bramann, the surgeon of Halle, died April 27 at the age of 58 from carcinoma. Bramann belonged to the von Bergmann school. In 1888 he became connected with the faculty in Berlin. In 1888, as von Bergmann's substitute, he performed a laryngeal operation on Emperor Friedrich, who was attacked by severe dyspnea caused by laryngeal carcinoma. At that time Bergmann gave warm praise to this operation, which was performed under the greatest difficulties. Through this service Bramann came into high favor with the present emperor. In 1890 he was ennobled and became regular professor in Halle, as Volkmann's successor. His scientific work embraced different fields of surgery without reaching any special eminence.

German Convention on Internal Medicine

(Concluded from page 1721)

INFECTIOUS DISEASES

Von Jochmann of Berlin confirmed the good results in the treatment of scarlet fever with salvarsan, which were reported at the last annual meeting. In the Virchow hospital in Berlin he treated 117 scarlet fever patients with small doses of salvarsan—0.1 gm. (1½ grains) for every 10 kg. (20 pounds) of body weight—and his impression was that the general condition, especially in cases with marked stupor, was very favorably influenced. He noted that the greatest advantage of salvarsan lies in its action on the inflammatory processes in the throat. Among twenty-five cases of this sort, twenty-four improved promptly: the tongue cleaned rapidly, the exudate disappeared and the swelling of the throat was reduced. In four cases in which the prognosis was absolutely unfavorable, three patients were saved, and among fifty-one with doubtful prognosis three died. Schreiber of Magdeburg also confirmed the favorable action and recommends a local treatment with salvarsan especially for the process in the throat.

CONSTITUTIONAL DISEASES

More time was occupied with addresses on diseases of deranged metabolism, especially diabetes. Of practical importance were the conclusions of Lüthe of Kiel on the treatment of diabetes. At the medical clinic in Kiel extensive use has been made for some time of enemas of sugar solution, particularly by the drop method. In this way it is possible to introduce in almost every case sugar to the amount of from 50 to 100 gm. per day, without difficulty and without any indication of irritation on the part of the intestine. [See Abstract 100, p. 1841.] As compared with equivalent quantities of grape-sugar or bread given by mouth, there has always been excellent utilization of the grape-sugar introduced into the intestine. In experiments made in healthy persons as well as in patients, in regard to the amount of sugar in the blood after the administration of enema by the drop method, there always was found a marked increase of sugar in the blood, so that the actual absorption of sugar from the intestine appears to occur beyond doubt. We still lack an explanation of the biologically interesting and practically important fact that sugar brought directly into the circulation is generally better utilized than that which is carried to the liver by the portal circulation.

Frank of Breslau discussed renal diabetes in men and animals. He showed that the poisons uranium, chromium and mercury, when given in small doses to experimental animals, constantly produced an excretion of sugar by the kidneys which continues for some time and may become permanent if the dose is repeated at certain intervals. The pathologic action of the kidney from poisons circulating in the body is probably responsible for certain cases of renal diabetes in man. A typical form of human renal diabetes is the excretion of sugar occurring in many women during pregnancy, which may be produced in almost all pregnant women by the overuse of starch or grape sugar.

KIDNEY DISEASE

E. Meyer of Strasburg read a paper on the influence of the nervous system on the activity of the kidney. From many experiments it is evident that there exists a center in the spinal cord which influences the activity of the kidneys. If this portion is injured by a puncture a marked increase in the amount of urine and the excretion of chlorids will follow, independently of the ingestion of water and salt. The same action is observed after section of the nerves passing to the kidneys. The puncture which produces increased excretion of salt is without effect after section of the renal nerves. The nerve paths which connect the kidneys with the brain can be determined still more accurately by special experiments. The increased excretion of chlorids and of urine brought about by injury of these paths is to be regarded in part as due to an irritation of the vasodilators and in part to a direct excitation of the renal cells. The facts discovered are of importance for the explanation of the normal function of the kidney, and they also serve to assist the investigation of many still unexplained pathologic conditions.

Frank of Greifswald called attention to the fact that by the new methods for determining the functioning of the kidneys after infectious diseases, injury to the renal function can be established. Marked disturbances of the renal function could be demonstrated in many cases of scarlet fever and pneumonia even a long time after the acute symptoms have disappeared. A number of facts were brought up in the discussion which explained the influence of the nervous system on the activity of the kidneys. Diabetes insipidus seems to be connected with diseases of the pineal gland; at any rate, in disease of this gland a marked increase of the amount of urine is frequently observed.

HEART DISEASE

Little is positively known regarding the physiology of the coronary vessels, particularly regarding the influence of the action of drugs on this important area of the circulation, since hitherto it has been possible to carry out experiments on the coronary circulation only on hearts which had been removed from the body. Morawitz of Freiburg has been able to study the coronary circulation in living animals by means of a special method. A marked action on the vessels of the heart is shown by nicotin. It first contracts the blood-vessels and later paralyzes them. This gives a new basis for understanding the relatively frequent occurrence of diseases of this circulatory area in excessive smokers. Nitrites as well as nitroglycerin, caffein and similar substances act as dilators. These have been long in use as cardiac stimulants, especially in calcification of the vessels of the heart. Epinephrin produces an enormous improvement in the circulation of the heart; while it markedly contracts many other areas of the circulation, it dilates the vessels of the heart. Quincke of Frankfort reported interesting experiments: It is a well-known fact that apoplectic strokes more frequently affect the right half of the body than the left, which is to be referred to the fact that obstruction of the arteries on the left side of the brain occurs more frequently than on the right. Quincke has tried to determine experimentally whether a more abundant supply of blood in the left half of the brain might also furnish an explanation for right-handedness. A greater supply of blood to the left half of the brain could not

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be demonstrated; on the other hand, minute solid granule-like substances enter more frequently the left artery than the right, which is referable to the asymmetrical branching of the aorta.

Strubell of Dresden reported on the influence of physical exercise on the function of the heart. He has examined swimmers, skaters, pugilists and other athletes and found that the influence of rational physical exercise on the function of the heart is favorable. On the other hand, all excesses which tend to increase the arterial pressure and tax the heart unusually were found to be decidedly injurious. Thus boxing, at least as carried on by professional boxers, must be regarded as unfavorable for the heart, in spite of the marked strengthening of the musculature. These pugilists die young, generally before the fortieth year.

Friedmann's Treatment for Tuberculosis

German physicians seem not at all concerned with the investigation of the Friedmann tuberculosis remedy. At any rate, nothing further has been published in regard to it, and I do not expect that anything more will appear. The distrust of Friedmann's statements and of his personal character, which was shown by most conservative observers soon after his first appearance, was naturally much strengthened by his trip to America. On hearing of his removal to America I remarked that although he would not secure the million dollars offered for the cure of Mr. Finlay's son-in-law, he would find a way in America to make two millions in another way. The course of his performances in America appears to show that my surmise was correct. The reports which come to us from the German newspapers and the information contained in THE JOURNAL are received here with a significant shrug of the shoulders, as if to say: "Just what we expected." Friedmann knew well that his task would not have been so easy in dealing with German physicians and with the German public as in America, where the daily press is even more accessible to sensational reports and advertisement than in Germany, and where the public believes in all things "made in Germany," even against serious objections. Friedmann's calculations will be realized. In spite of the warning of your state boards of health, enough credulous people will be found who will pay sufficiently for his work, and Friedmann, having "made his pile," will spend it either in America or in Germany as a completely independent adventurer who cares nothing for his scientific reputation, for the respect of his colleagues, or even for the opinion of so-called good society. With this happy prognosis I will close for the present the chapter concerning Friedmann.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, May 17, 1913.

A Single Session Each Day in the Schools

Owing to the climate in this country, the schools have hitherto required the pupils to come twice daily to school, (8 to 10 or 11, and 2 to 4 or 5). This gave little time for outdoor exercise, as the children were also bound to do a fair amount of writing at home. For this summer a change has been planned, so that only the morning will be used for teaching purposes, the school hours lasting from 8 to 12. In the afternoons, each class will have to devote at least four hours a week to athletics or outdoor sports, and no indoor teaching will take place after 12 o'clock between May 15 and July 15. The formation of excursion-classes, of plays in the open air, and of swimming and mountain climbing will be favored in every way by the school boards. The hygienic effect of this measure will be no small one, as our children, especially those of the poorer classes, are none too well used to this kind of sports. The health conditions in the poorer schools of the towns and cities are sometimes rather lacking from the point of view of the eugenist, and public feeling is not yet wide awake to the necessities of open air for the development of the young.

Compulsory Admission of Inpatients into Hospitals

The deaths of two persons who sought in vain to be received as inpatients in hospitals in Vienna, and dropped dead in the streets, have evoked a storm of indignation and had the most unexpected effect of inducing bureaucratism to think of its duty. As a result a circular has been sent to all medical men and all medical and charitable institutions to the effect that in future any person applying to a hospital with a certificate from a doctor stating that the bearer is suffering from this or that disease and is urgently needing hospital care for danger of life, must be received without hesitation. This person must be accommodated. The circular does not state how it should be done, if the hospital is completely filled, but it simply says "must be received." Naturally such an order will be a boon to the poor sufferers, but nevertheless the scarcity of beds will continue for some time, and will make it the more imperative to erect new hospitals and charitable institutions. The chief drawback of our hospital system is the fact that we have far too little hospital accommodation for tuberculous patients. They are mostly those who are sent away from one hospital after the other without getting the benefit of a bed; and yet numerous efforts by philanthropists to erect people's tuberculosis sanatoriums in healthy, if fashionable districts, are violently attacked and frustrated by cold-hearted proprietors of hotels and health resorts. More energetic action by the government is expected, which will permit the placing of at least 1,000 beds at the disposal of poor tuberculous patients.

Marriages

ROBERT ALEXANDER GLENN, M.D., Oakdale, Cal., to Miss Myrtle Weaver of Lancaster, Pa., in Philadelphia, May 20.

NATHAN MORRIS BENYAS, M.D., Portland, Ore., to Miss Dorothy Reeder of Scranton, Pa., in Philadelphia, May 20.

HERMAN CANFIELD PITTS, M.D., Providence, R. I., to Miss Lucy Esther Macdonald of Princeton, N. J., June 3.

DAVID HOWARD MCKINLEY, M.D., Winchester, Ky., to Miss Helen Himes of Oxford, Pa., at Louisville, May 21.

JOHN EDWIN FROOM, M.D., Eagle, Idaho, to Miss Cass Cassmeyer of Newport, Ky., at Boise, Idaho, May 16.

EDWARD BARTHOLOMEW MANION, M.D., Ilion, N. Y., to Miss Margaret Connors of Newport, N. Y., May 14.

OLIVE WINONA BROWN, M.D., Salem, Mass., and Mr. Nathan Israel Hale of South Royalton, Vt., June 1.

HARRY BOYDEN ROWE, M.D., Miami, Fla., to Miss Audrey Belle Quinton of Trenton, N. J., May 13.

ROBERT J. BASKERVILLE, M.D., Detroit, to Miss Georgia Richardson, at Wayne, Mich., April 21.

GERRIT EDWARD VERMEER, M.D., Rock Valley, Iowa, to Miss Vashti Cram of Sibley, Iowa, May 20.

WILLIAM WARREN HILDRETH, M.D., to Miss Kathleen Whitaker, both of New York City, May 21.

JOHN S. KILBRIDE, M.D., Watertown, N. Dak., to Miss Mary Birchen of St. Paul, Minn., May 12.

WALTER DEAN LEVI, M.D., Louisville, Ky., to Miss Greta Wynant of Anderson, Ind., May 15.

NELSON HORATIO LOWRY, JR., M.D., to Miss Amalie C. Pipereit, both of Chicago, May 17.

CHARLES ALLEN STONE, M.D., St. Louis, to Miss Smith of Shipman, Ill., May 17.

Deaths

Frederick Forchheimer, M.D. a leader in the profession of Cincinnati, a splendid citizen, eminent teacher and scholarly writer; died in the Jewish Hospital, Cincinnati, June 1, sixteen days after an operation for the relief of acute disease of the prostate gland, aged 59. He was graduated from the College of Physicians and Surgeons, New York City, in 1873 and, after two years of study abroad, located in his native town, Cincinnati. He taught the first course in histology ever presented in the Medical College of Ohio and later filled the chairs of chemistry, physiology, and theory and practice of medicine. In 1889 the college instituted a department of pediatrics with Dr. Forchheimer at its head. He was also dean of the college for four years. He was actively engaged in hospital staff work for more than thirty years, serving as physician to the Good Samaritan and Cincinnati City hospitals and as consulting physician to the Jewish Hospital. He was the author of standard works on "The Prophylaxis and Treatment of Internal Diseases," which appeared in 1907, and of "Therapeusis of Internal Diseases," which was published this

year. Dr. Forchheimer was a member of the American Medical Association, president of the Association of American Physicians in 1910 and a member of the American Pediatric Society and Cincinnati Academy of Medicine. The latter body, at a special meeting, adopted resolutions setting forth the irreparable loss suffered by its members in the death of Dr. Forchheimer, and expressing to his family and friends deep sympathy in their great bereavement.

Harry M. Hallock, M.D. College of Physicians and Surgeons, New York City, 1889; Major Medical Corps, U. S. Army, retired in 1908 on account of disability received in line of duty; formerly medical director of the Government Reservation, Hot Springs, Ark.; a member of the American Medical Association; who had suffered for a long while from melancholia; was found dead in the woods near Hot Springs, May 19, from the effects of a self-inflicted gunshot wound of the head, aged 45.

Angus John Murray, M.D. College of Physicians and Surgeons, Chicago, 1885; president of the New Brunswick Medical Society in 1909; a member of the Provincial Board of Health and of the Municipal Council of Fredericton Junction, and for two years warden of Sunbury and Queens County; died at his home in Fredericton Junction, April 3, from pulmonary tuberculosis, aged 57.

Charles P. Bunsen, M.D. University of Heidelberg, Germany, 1855; afterward assistant in the St. Lazare Hospital, Paris, and later a physician to the Russian court in St. Petersburg with service in the Medical Corps of the Russian Army; a citizen of the United States for nearly fifty years; died at his home in Winona, Minn., May 16, from senile debility, aged 82.

Ole T. Hougen, M.D. Northwestern University Medical School, 1888; a member of the American Medical Association and a resident of Grand Rapids, Wis., for nearly twenty-five years; died in Wesley Hospital, Chicago, May 12, after an operation for the relief of obstruction of the stomach and intestines, which was found to be due to malignant disease, aged 50.

Joseph Tomlinson, M.D. College of Physicians and Surgeons, New York City, 1878; a member of the American Medical Association, American Academy of Medicine and Board of Education of Bridgeton, N. J.; chief of the surgical staff of the Bridgeton Hospital; died in the Jefferson Hospital, Philadelphia, May 18, after a surgical operation, aged 58.

Frank Charles, M.D. New York Homeopathic Medical College, New York City, 1895; a Hungarian practitioner known to the poor of the lower East Side of New York as the "angel doctor;" died in his apartment in New York City, May 21, from nephritis, aged about 60.

Ezra H. Cary, M.D. Eclectic Medical Institute, Cincinnati, 1859; Jefferson Medical College, Philadelphia, 1864; surgeon of the Sixteenth Pennsylvania Volunteer Cavalry during the Civil War; died at his home in Prosperity, Pa., March 9, from influenza, aged 82.

Hiram Hunter Ruble, M.D. University of Tennessee, Nashville, 1889; a member of the Tennessee State Medical Association; for twenty-five years a practitioner of Greene County, died at his home near Greeneville, April 21, from valvular heart disease, aged 61.

Franklin P. Miles, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1893; died at his home in Las Animas, Colo., from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, May 15, aged 46.

Charles Alonzo Wilson, M.D. Harvard Medical School, 1869; a member of the American Medical Association; formerly surgeon in the United States Navy and a veteran of the Civil War; died at his home in St. Louis, about May 19, aged 70.

Rankine Dawson, M.D. McGill University, Montreal, 1882; L.R.C.P. Lond., 1881; M.R.C.S. Eng., 1886; for many years surgeon on the steamers of the Peninsular and Oriental Line to the Orient and South America; died in London, April 1, aged 54.

Phineas Sewall Stearns, M.D. College of Physicians and Surgeons, Boston, 1882; for many years a practitioner of Owego and Buffalo, N. Y.; died at the home of his niece in Stony Creek, N. Y., May 5, from senile debility, aged 83.

Robert Parks White, M.D. University of Pennsylvania, Philadelphia, 1886; a member of the American Medical Association and a prominent practitioner of Fort Wayne, Ind.; died at his home in that city, May 19, aged 53.

John Augustus Magee, M.D. University of Vermont, Burlington, 1872; a member of the Massachusetts Medical Society; city physician of Lawrence from 1883 to 1885; died at his home, May 23, from heart disease, aged 65.

Benjamin H. Anderson, M.D. Memphis Hospital Medical College, 1904; of Brownwood; a member of the State Medical Association of Texas; died in Chicago, about May 14, while on his way home from Europe, aged 33.

John M. Kane, M.D. Indiana Medical College, Indianapolis, 1875; for half a century a practitioner of Hamilton County; a veteran of the Civil War; died at his home in Westfield, May 17, from senile debility, aged 82.

Henry McEwen Pettit, M.D. Jefferson Medical College; a surgeon in the Confederate Service during the Civil War and later a resident of Carrollton, Mo.; died in Frederick, Md., April 11, from diabetes, aged 77.

Roch Samuel Moise Mignault, M.D. Ecole de Médecine et de Chirurgie, Montreal, 1859; liberal member of Parliament from Yamaska, Que., for several years; died at his home in Yamaska, March 30, aged 76.

John Henry Allen, M.D. Bellevue Hospital Medical College, 1876; a member of the Medical Society of the State of New York; died at his home in Churchtown, N. Y., February 23, from typhoid fever, aged 72.

John E. Dillon, M.D. Miami Medical College, Cincinnati, 1877; formerly a practitioner of Woodsville and Antioch, Ohio; died at his home near Barnesville, Ohio, March 3, from heart disease, aged 78.

James H. McLaughlin, M.D. Jefferson Medical College, 1864; Cincinnati College of Medicine and Surgery, 1873; died at his office in Braddock, Pa., March 13, from heart disease, aged 60.

Reuben Harrison Huddleston, M.D. Rush Medical College, 1872; for many years a resident of Miami, Fla.; died at his home, May 16, from cerebral hemorrhage, aged 74.

Robert Lawrence, M.D. University of Victoria College, Coburg, Ont., 1871; died at his home in Vancouver, B. C., March 19, from cerebral hemorrhage, aged 70.

James Wallace, M.D. University of Toronto, Ont., 1866; for more than thirty years a practitioner of Alma, Ont.; died at his home in that village, April 11, aged 78.

John Clement Parker, M.D. Medical School of Maine, Brunswick, 1891; a member of the Rhode Island Medical Society; died at his home in Providence, March 12.

Willie Waldo Hendershott, M.D. Rush Medical College, 1883; the first practitioner of Deer Park, Wash.; died at his home in Camden, Wash., recently, aged 54.

Thomas G. Gordon, M.D. Columbus (O.) Medical College, 1884; died at his home in New Philadelphia, O., February 11, from cerebral hemorrhage, aged 56.

James W. Waters, M.D. St. Louis Medical College, St. Louis, 1888; for twenty years a practitioner of Bachelor, Mo.; died in Reform, Mo., May 21, aged 46.

Israel C. Barlott, M.D. Long Island College Hospital, Brooklyn, 1872; of Hooversville, Pa.; died in the Johnstown (Pa.) Memorial Hospital, May 15.

William O. Eastwood, M.D. University of Toronto, Ont., 1853; coroner for the Whitby (Ont.) District; died at his home in Whitby, March 22.

Charles W. Unger, M.D. University of Halle, Germany, 1863; died at his home in Los Angeles, March 21, from valvular heart disease, aged 73.

Joseph H. Putnam, M.D. Bellevue Hospital Medical College, 1864; died at his home in Bridgeton, N. J., April 14, from senile debility, aged 80.

John Edgar Lundy, M.D. University of Toronto, Ont., 1897; died at his home in Portage la Prairie, Man., April 27, aged 38.

James Lester Carney, M.D. Long Island College Hospital, Brooklyn, 1888; died at his home in Brooklyn, April 22, aged 63.

Solomon C. McLean, M.D. Queens University, Kingston, Ont., 1874; died at his home in Spencerville, Ont., April 16, aged 66.

Lewis C. Schutt, M.D. Louisville (Ky.) Medical College, 1875; died at his home in Toledo, Ohio, May 21, aged 63.

Edward M. Small, M.D. Jefferson Medical College, 1871; died at his home in Eastport, Me., April 20, aged 66.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OTHER MATTER TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE "BUSINESS" OF FRAUDULENT MEDICAL PRACTICE

Advertising Specialists on the Pacific Coast

The "business" of medical quackery is run on much the same plan in all sections of the country. It has been shown[1] that the "United Doctors," operating largely in the central West and in the Eastern states, is a purely business and not a professional organization; it is owned and controlled by persons who hire cheap doctors to work the people. On the Pacific Coast, a similar system is operated by another concern, although the Western offices are not run under one firm name. In Seattle, Tacoma, Portland, San Francisco, Los Angeles, Oakland and Spokane offices are owned by two persons, H. J. Jiles and C. K. Holsman, but are run under various names. In Seattle, Dr. Cook & Co. was found to be a corporation with these men as the chief owners. They also own the Scott Medical Institute. In Tacoma, the office is run under the name of Dr. E. A. Severance. In Portland, where there are two offices, one is run under the name of Dr. C. K. Holsman. In the other cities they are run under the names of the men hired by Jiles and Holsman. When these doctors are changed from time to time the name of the office is likewise changed.

Recently in Seattle a campaign of exposure has been carried on by the Seattle *Sun*, a daily paper, assisted by the county medical society, the district attorney, and by various suits in the courts for recovery of money fraudulently obtained by these advertising doctors. Commenting on their methods, which are almost exactly similar to those of the "United Doctors," the Seattle *Sun* says:

"EMINENT SPECIALISTS" ONLY HIRED MEN

"It should be of interest to any person contemplating answering one of their alluring advertisements to know that the 'eminent specialist' is merely a salaried employee—a hired hand of a corporation—that as such he draws pay of from $30 to $50 per week out of an income of $500 to $1,000 per week brought to the corporation . . . It is not a profession; it is a business and a cold-blooded one, as most of those who have had dealings with it can testify."

HIRED MEN EXPECTED TO GET THE MONEY

According to the statement of one of the "eminent specialists" who was formerly in the employ of Jiles and Holsman, and who became disgusted with the business, the expenses of one of their offices for equipment, salaries, drugs and supplies and advertising bills amount to from $1,500 to $1,800 per month, about half of which usually goes to the newspapers for advertising. The "eminent specialists," as hired men, are expected to make money for their employers and are given definite instructions to that effect. They are told to find in each patient the most serious malady they can and to obtain the largest possible fee for the treatment and continue it as long as the patient will stand for it. No prospective patient must be allowed to escape who comes for "free consultation." The value of these hired specialists to the concern is their ability to get money, and in Seattle it is said that one office has shown a profit of not less than $200 per month above expenses and sometimes as high as $2,000. The seven offices operated by Jiles and Holsman are said to return a profit of from $5,000 to $10,000 per month out of the readers of daily newspapers who have been lured into the advertising doctors' offices.

"FREE CONSULTATION" BAIT

The manner in which these concerns take advantage of people who come to their offices under the bait of "free consultation" is graphically set forth in a series of stories in the Seattle *Sun* by a reporter who was sent to the offices of Drs. S. S. Johnson, J. Eugene Jordan and H. P. Wilkins. This young man after being pronounced physically sound and perfect by two regular practitioners of Seattle, after a thorough examination, went on successive days to the offices of the three quacks named. In each instance he complained simply of a backache about which he told them he was "worried." Without making anything in the nature of a thorough examination, the suggestion of "worry" was immediately seized on by the quacks, who proceeded to try to inspire the young man with terror as to his condition and the awful consequences which would ensue unless he took their treatment at a substantial fee. The manner in which the quacks proceed to inspire terror into the hearts of their victims who are "worrying" is described by the reporter, as follows:

INSPIRING TERROR IN THE VICTIM

"Worry! That word 'worry,' that's it. It will get you anything the 'free consultation' room has in stock. Worry, w-o-r-r-y. That's the mental state that breaks down your defenses; that fans the slumbering worry-embers until flames leap out of them—flames that turn the brain hot; set streams of perspiration running down your body; that eat into your heart; scorch your courage; incinerate every vestige of hope in the human breast; that shrivel your strength, and wither your nerves.

"You go to the 'free consultation' room after your imagination has whipped your mind into horror. Submitting, you go into the room with mock defiance; chin up and shoulders thrown back. You come out beaten. You have a bottle under your arm. You don't exactly know what's wrong with you, but you know that the bottle holds the 'cure' for what you have got. The terror that capitalizes 'free consultation' is in you; the day looks gray. You are ready to sink under the gloom of hopelessness."

ALASKA MINER SWINDLED

Some of the practical results of the "free consultation" methods are revealed in the case of an Alaska miner named Emil William Nelson who was lured into the offices of Dr. Cook & Co., owned by Jiles and Holsman, where he was made to believe that he was seriously ill and required a number of surgical operations. When it was learned that Nelson had about $3,000 in one of the Seattle banks he was induced by the most shameless misrepresentations to pay to Dr. Cook & Co. $2,287.50. Later when Nelson woke up to the fact that he had been swindled, he employed a lawyer to get back his money. It took a fight to do it, and also three detectives to secure enough evidence to make the fight successful. The evidence indicated that Dr. Cook & Co. was a corporation and that the stock was held by C. K. Holsman and H. J. Jiles as stated. When the court found that the concern was incorporated it was held that a corporation could not hold a license to practice medicine and judgment was rendered for the plaintiff. Nelson managed to recover most of his money after selling out the offices of Dr. Cook & Co., who immediately opened the offices again under the name of Dr. H. P. Wilkins, who was employed to run it. In another lawsuit, according to the Seattle *Sun*, Dr. S. S. Johnson, who was one of the quacks consulted by the reporter for the *Sun*, was required to pay back $35 to a patient from whom that sum had been extracted at a "free consultation." In this instance the suit was not brought against Dr. S. S. Johnson, in whose name the office is run, but against R. M. Griebel. The lawyer for the defendant would not explain who the R. M. Griebel was, but it was admitted that Dr. Johnson was merely the hired man for the real owners of the office.

VAST SUMS SPENT ON QUACKS

In commenting on the practice of these quacks, the Seattle *Sun* said:

"It would be impossible to estimate the total of the vast sum of money annually abstracted from the pockets of Seattle people by advertising doctors and patent-medicine fakers who sell their nostrums through a working alliance with the daily newspapers, but it is certain that the larger part of this sum is taken from the poorer class of people of the community,

1. THE JOURNAL A. M. A., March 1, 1913, p. 682.

including many unfortunates who are nigh unto death and are spending all the money they have under the delusion, fostered by the cure-all doctors, that they can be fully restored to health."

A CLEANUP PROMISED

In Washington a law has been enacted providing for the prosecution of persons who publish untrue, deceptive or misleading advertisements. The prosecuting attorney of the county in which Seattle is located has given it as his opinion that these advertising quack specialists can undoubtedly be reached under the law and driven from the city, and he expresses it as his intention to undertake prosecutions when the law becomes effective in June of this year. The work of the Seattle *Sun* in thus exposing quack organizations similar to that of the "United Doctors" in the central West, deserves the highest praise. It is understood that the *Post-Intelligencer*, another leading paper of Seattle, has recently adopted the policy of excluding from its advertising columns all fraudulent medical advertising.

DRUG DETERIORATION

The Wayne County (Michigan) Medical Society recently appointed a committee to cooperate with a similar committee appointed by the Detroit Retail Druggists Association to investigate the question of deterioration of drugs. Dr. W. J. Wilson, Jr., of Detroit, calls attention to this fact and sends a copy of the report:

The Committee on Drug Deterioration appointed by the joint meeting of the Detroit Retail Druggists Association and Wayne County Medical Society would respectfully report:

Recent investigations of the fluidextracts show that with few exceptions they retain their potency for a number of years when kept under proper conditions; that is, without access to air, or exposure to light.

With such drugs as hydrogen peroxid in which the absolute limit of potency is eighteen months, and the probable limit from six to twelve months, we would recommend that the manufacturers state on the label the date of manufacture as well as the limit of potency.

We would recommend that the practice of keeping all liquid preparations, such as tinctures and fluidextracts which deteriorate on exposure to light, preferably in light-proof cupboards, or in amber-colored bottles not exposed to direct sunlight, with the usual precautions of a tight-fitting and air-proof stopper, be made universal.

We would also recommend that the subject of drug deterioration be made one of the leading topics for discussion in all the state and national pharmaceutical and medical societies in the meetings of the near future.

Correspondence

Books Needed by Dayton Physicians to Replace Those Destroyed by the Flood

To the Editor:—There have been many loyal offers of help to the physicians who have been sufferers in the late flood. There were about one hundred in Dayton who were losers to a greater or less extent. On some it has worked an almost ruinous hardship, but so far as I know there has been no one seeking personal aid.

The medical profession responded with its characteristic promptness, courage and efficiency to the call of duty in the great disaster that overtook us, and did noble work. This goes without saying, for when did the medical profession ever fail at the call of humanity? So we are not pleading for personal help, or special sympathy, or for recognition of any duty done; but the members of the Montgomery County Medical Society did suffer a loss which impaired their professional efficiency very materially, to which the society has appointed me to call your attention.

The medical department of our public library was a complete loss. Not a single book was saved. There were in the library more than sixteen hundred new and standard medical works, making a good, practical working and reference library that was very valuable to the profession. Now that so many physicians have lost all their private libraries, and in many instances cannot for obvious reasons replace them for a long time, such a public library would be more valuable than ever—is in fact, almost a necessity to an unimpaired professional efficiency.

Therefore the society has thought that it might without a lowering of dignity ask you to call this public loss of the Dayton physicians to the attention of those of the profession who may be in a position to make library contributions, and of the medical publishers, who have always found us liberal patrons, and to ask their cooperation in building up this department of our library. We believe that it will be necessary only to make our need known.

All communications in regard to the matter may be addressed to Dr. W. J. Conklin, 17 East First Street, Dayton, Ohio, who is chairman of the Library Committee of the Society and president of the Library Board of the Public Library. In order to avoid duplications, those who wish to contribute books should first send the titles, and wait for an answer. HORACE BONNER, M.D., Dayton, Ohio.

[An editorial comment will be found in this issue.—ED.]

Cooperation in Medical Practice

To the Editor:—Why should not the group-unit, which is so plainly the chief efficiency factor in industrial and commercial enterprises be the same in medical practice? Could not small groups of medical men, specializing or semi-specializing, achieve far greater results, primarily for the patient and, secondarily, for themselves?

The day of the patriarchal, almost parental, "all-round" family practitioner is passing, if it has not already passed.

The evolution of civilized needs, the vast advances in every department of medical science, render it impossible for any one man to keep abreast of progress, even to form a symmetrical conception of present-day knowledge. These have produced new aspects of supply and demand. Giants of science who are familiar with essentials in certain departments and are capable of long perspective and deep penetration into mysteries rarely assume responsibilities of family practice; a few undertake consultations in limited clinical fields.

Every graduate of a reputable medical school must have qualified in certain uniform directions. Yet how many fall out of the ranks and turn to other pursuits, often successfully enough! The essential condition for success has been defined by Arnold Bennett as, in the final count, "an insatiable appetite to succeed." This may be conditioned on divers qualities, among which is always consistency in the will to achieve. This also probably depends on some freedom in choice of direction for effort.

Does the practice of medicine always furnish a fair ground for freedom of choice? To one of overmastering impulse, yes; but not unless that impulse has opened to it liberalities in the field of opportunity common to the broader avenues of competition outside of a profession so nicely poised on ethical grounds as is medicine.

The essential purpose of the apostle of medicine is to guide the human being, whether in or out of health.

One man can furnish one group of capabilities, another a very different one, and no man should be expected to do first-class work in domains for which he is not fully qualified. Give each one his particular work to do and he will make good. The work coming to him in which he is not interested or trained should be shared with others on an equitable basis. In the larger cities this is accomplished by consultations. When conditions to be met are clearly defined, the difficulties are small; but they exist and must be met, chiefly by forming a public opinion that mutual helpfulness among physicians is absolutely necessary in the best interests of the patient.

We are constantly confronted with perplexities based directly on the erroneous, archaic notions of medical practice which certain outworn traditions have kept alive. There is too much *laissez faire*, "let well enough alone," and not a little culpable moral timidity.

There are few of us who have not been told by our most cherished and attached patients that we ought to attend to one or another specialized problem ourselves; that they "do not like to be turned over to some one else." Thereupon too many worthy practitioners play the fool; strive to cover too large a territory; assume responsibilities outside of personal capabilities, and thereby come to grief; whereupon the patient, taking counsel with a shrewd neighbor, promptly leaves us.

A plan which is simple and promises much efficiency for all concerned is this:

In any small community of about fifteen or twenty practitioners, there will be found those who are better qualified by inherent aptitudes, acquired skilfulness, experience, taste or office equipment to render special service; for instance, in departments of surgery, in electrotherapeutics, especially in roentgenology, now so imperative in diagnosis; or in expert diagnostic methods for the heart, lungs, skin, etc.; in short, in many ways to cooperate with his colleagues to the best interests of all concerned, especially the patient.

Let there be a well-defined basis of fees for this semispecialism—to which few patients will object. They can be educated to realize the advantage to themselves. Or, if circumstances warrant it, when there are, say, twenty-five or fifty doctors near each other, let them form partnership groups, each treating all the patients who apply to him and yet cooperating in specialized lines.

Individual independence can be maintained, if desirable, except as described. Then, whoever specializes or semi-specializes can well afford to purchase equipment and spend time and money in centers of learning.

The outworn idea that any one man is capable, or should be expected to be capable, of being an all-round expert in conserving the physical and moral welfare of the community is sheer folly. To persist in encouraging people to think so encourages all sorts and conditions of charlatans, breeds discontent, strife and evil-speaking, alienates friends, jeopardizes efficiency and imperils human lives.

The group-unit, judiciously evolved, will go far toward raising the index of efficiency of the medical profession. Above all, it will raise to a most desirable position of advantage the professional potential, to well-deserved confidence, honor and esteem in the community.

J. MADISON TAYLOR, M.D., Philadelphia.

The Rattlesnake-Venom Treatment of Epilepsy

To the Editor:—In THE JOURNAL for March 29, 1913, appears an editorial on "The Rattlesnake-Venom Treatment of Epilepsy," which, although chiefly aimed at another worker on this subject, is, in many instances, so manifestly unfair that I, who am wholly responsible for the origination of this method of treatment, cannot allow it to stand without a protest.

In the first place, you seem to think that the essential feature in the setting aside of the epileptic seizures by crotalin resides in the injurious shocks and "severe reactions" which are incidental to its injection. Nothing could be farther from the truth. It is a fact that when the drug was first injected it was given in larger doses than have since been shown to be necessary to produce the desired results; but that it is absolutely indispensable to call forth a profound local or general reaction is not true, and against this I have protested for more than two years. It may be regarded as a safe working rule that the reaction at the seat of injection, or throughout the body, bears no vital relation to the best effect of the drug. Extended experience points out that it is always desirable to begin with small doses in all new cases, and to increase them gradually as immunity becomes established.

The second objection which you offer is the fear that adventurous experimenters ignore the fact that "all snake venoms have a hemolytic power." This might be serious if it were wholly true, but it is one of the half-truths that have done duty before in the defense of extravagant statements. If snake venom is hemolytic, so are the cyanids, the only difference being that this action is much more accentuated in the latter than in the former; but I hope that this is no reason for excommunicating them from the non-official formulary, if they ever found a place therein. The same action is also characteristic of phosphorus, mercury and other medicinal agents; yet, from last accounts, they have not been Jonahized by the Council on Pharmacy and Chemistry. The real truth is that neither snake venom nor the other agents here named have been proved to be destructive to the blood in minimum doses.

Third, you apprehend that venom injections may surreptitiously hide some dangerous germs in their meshes, and thus pave the way for fearful pyogenic infection. This is a mere surmise, resting on an extremely flimsy basis; for, among the more than six thousand injections of this drug, I have yet to meet my first case of this kind.

Fourth is the hasty claim that before snake venom is employed "in human beings" it should be subjected to "careful animal experimentation" and "be accurately standardized." If you know of any drug that has undergone a more vigorous, protracted and extensive scrutiny at the hands of expert investigators, I should like to hear of it; and, if you have any doubt about the snake being less capable of standardizing its venom than the official standardizer, you should make a series of tests, at certain intervals, with five or six equally large doses of the natural venom, abstracted from different snakes of the same species. Rattlesnake venom, of whatever source, retains an unimpaired activity for a long time. I have found that, when kept in a dry state for twenty years, it is just as powerful as that which was ejected freshly at the end of that period.

Finally, with a great deal of earnestness, you expatiate on the well-known fact that epilepsy is sometimes temporarily arrested by shock, high infectious fever, surgical operations, injuries, etc., and then, presuming on the credulity of your reader, you share with him the profound secret that in the dark ages traumatism was applied as a remedy for "falling-fits," whether by decapitation or by less sanguinary methods you fail to state; but you console yourself with the thought that the benefit which epileptics are said to experience from the action of snake venom is, after all, more apparent than real.

On the one hand, you bring what you undoubtedly believe to be a series of overwhelming charges against snake venom as a remedy for epilepsy, of which not one stands the test of even a cursory examination, making it certain that if it ever shall be shown that snake venom is useless in relieving epilepsy it will not be on account of any of the before-named imputations. On the other hand, a set of men, all of whom are well-known practitioners of a professional standing as high as your own, who are fully as able to distinguish between the false and the true in therapeutics, consider it a sacred hippocratic obligation to save life and lessen suffering whenever they can, even though they are compelled to step outside the rock-worn restrictions of the non-official formulary; they are interested in snake venom, not as a cure-all for epilepsy, but as an agent which, by further clinical investigation, may be found to possess the power of giving permanent relief to many of these sufferers who are even admitted by you to be "too commonly helpless."

THOMAS J. MAYS, M.D., Philadelphia.

[COMMENT.—Nothing in Dr. Mays' protest alters the scientific facts on which the editorial was based, and it is not the purpose of this reply to enter into polemics to support them. There is another phase of the matter which can now be elaborated.

While Dr. Mays comes forward as the spokesman and champion of Spangler's rattlesnake-venom treatment of epilepsy, we can hardly believe that he stands ready to defend the lay press write-ups by which this hazardous therapeutic experiment has been promulgated and commercialized. Except that the subject is one of less general interest, its sensational publicity has been on a par with that of Shafer's Phylacogens and Friedmann's tuberculosis treatment. Through it, victims

of incurable epilepsy have been led to submit themselves to a method of therapeutic experiment wholly empiric and fraught with just such dangers as our editorial indicated. Physicians otherwise conservative, through the importunities of patients aroused by these newspaper accounts, have been led to test Spangler's treatment, and it is on the basis of such trials by competent epileptologists that we condemned the method and cautioned the profession against its adoption.

Dr. Mays' letter gives the opportunity of protesting again against the tactics by which the crotalin treatment of epilepsy has been forced into public notoriety.—ED.]

Prescribing Proprietaries, and Managing the Detail Man

To the Editor:—The professions of medicine and pharmacy are distinct, and the best results are obtainable only when the physician and the pharmacist each attends to his own business and the two work in harmony. As the result of the activities of our pharmacologic society, composed of physicians and pharmacists, the conditions in Evanston are a surprise to visitors to our city. The use of proprietary medicines is reduced to a minimum. Still further to reduce the nuisance of the detail men and their samples, at the last meeting a committee was appointed, consisting of one physician and one druggist, to whom detail men must present their case before they will be received by the other members. Exploiters of proprietary mixtures will be refused endorsement, as will those also who have been involved in doubtful financial transactions in the past. Would it not greatly aid the general condition if the Evanston example should be generally copied through the country?

HENRY B. HEMENWAY, M.D., Evanston, Ill.

[COMMENT.—The Evanston method of dealing with the proprietary question indicates that the physicians of that town are alive to their responsibilities. Would it not be simpler and just as efficient, however, to accept the findings of the Council on Pharmacy and Chemistry as constituting credentials for the detail man? Many physicians are using New and Nonofficial Remedies for just this purpose.—ED.]

Needed Reorganization of the Indian Medical Service

To the Editor:—I have read with a great deal of interest Dr. Wimberly's letter to THE JOURNAL (May 17, 1913, p. 1558), and in most respects agree with his exposition.

During the last year the Medical Association of the United States Indian Service has been formed and has appointed a committee to draft a bill for introduction in Congress either for our amalgamation with the Public Health Service or for the organization of the medical work among the Indians along the same lines. Conditions at present are deplorable in the extreme, not only for the Indians and the physicians concerned, but for the public at large. When over 20 per cent. of the Indians have trachoma, in Oklahoma over 68 per cent., how long will it be before the white settlers around and on the reservations also become infected? Owing to its antiquated methods of handling hygienic and sanitary questions and the restrictions imposed on the physicians, the Indian Office has shown its utter inadequacy to deal with the problems involved.

The physicians in the Indian Service are, I believe, fully as capable as the ordinary practitioner on entering the service. They are selected by a competitive civil service examination and must possess the same qualifications and pass the same examinations as physicians for the Isthmian Canal Service, Coast and Geodetic Survey, Reclamation Service, Philippine Service, etc., and the Indian Service physicians receive only from $1,000 to $1,200 a year whereas the others enter at $1,800. After assignment to the reservation, they find in many instances no quarters or quarters unfit to live in; no means of transportation or an old worn-out team or saddle pony with which they are supposed to cover several hundred square miles of territory. Not only that, but every act is subject to the superintendent's wishes. The teams they drive, the drugs they purchase, the quarters they occupy, their chances of increase in salary or promotion of any sort depend on his whims. Some of the superintendents are anxious to improve conditions but are either lacking in funds or fear to antagonize the Indians, while others lend as little support as possible. The reservations are so large that it is impossible often to give an acute case the attention it really deserves; besides, there is often much antagonism on the part of the Indian to treatment by white physicians.

Most of our work should be along sanitary and hygienic lines. This would require not only a larger allowance for medical work but also a complete reorganization of the Indian Medical Service. It should be separated from lay control entirely, some one skilled in medical science placed at the head and then organized along the lines of the Public Health Service or Medical Corps of the Army and Navy. Better still from economic reasons would be its union with the Public Health Service, where it in reality belongs.

C. W. LANE, M.D., Lincoln, Wash.
Secretary and Treasurer, Medical Association of the United States Indian Service.

Limited Usefulness of Fish in Destruction of Mosquitoes

To the Editor:—In THE JOURNAL, May 3, 1913, p. 1348, there is an item on a small fish, native of Barbados, called commonly "millions," which is used in the Cape Province, South Africa, for the destruction of the larvae of anophelines as one means of combating malarial fever. Similar experiments with the same species of fish, from Barbados, were carried on in the Canal Zone by the Sanitary Department of the Canal Commission three years ago. The method was found to be applicable only to small permanent collections of water unsuited to drainage or oiling. The fish are so small that they easily become prey of larger fish in streams and ponds of any size, and the smaller collections of water are usually more easily treated by oiling or drainage. For these reasons the value of this method of mosquito destruction is limited.

ALFRED G. FARMER, M.D.
District Physician, Gatun, C. Z.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CRITICISM OF A PRESCRIPTION FOR "LIVER TROUBLE"

To the Editor:—Please criticize the following prescription, which I am informed was given after a diagnosis of "liver trouble":

℞	Resorcin	ʒ ss
	Acid borac.	ʒ i
	Sodii bicarb.	ʒ ii
	Tinct. nuc. vom.	ʒ iii
	Syr. ipecac.	ʒ i
	Fl. ext. rhubarb	
	Fl. ext. hydrast.	āā ʒ iiss
	Elix. digest. comp.	ad ʒ iv

M. Sig.: Teaspoonful after meals.

JAMES WILTSE, M.D., Brewster, N. Y.

ANSWER.—Our correspondent's implied criticism of the diagnosis seems to us appropriate. We might say that the prescription fits the diagnosis. It is rather characteristic of the type of mind that is satisfied with an indefinite diagnosis like "liver trouble," to attempt to cover possible therapeutic indications by a monstrosity of polypharmacy. Aside from the impropriety of combining so many ingredients in one prescription, there are several obvious chemical incompatibilities. The mixture of sodium bicarbonate and boric acid in a solution would result in the formation of carbon dioxid and a salt of sodium—a borate. The antiseptic power of the boric acid is considerably reduced by such a reaction. The combination of an alkali like sodium bicarbonate with a compound of strychnin is likely to give rise to a serious incompatibility. In this case it is probable that the strychnin might be held in solution by the alcohol

in the tinctures and fluidextracts, but the possibility of a precipitation should always be kept in mind. While bicarbonates do not immediately precipitate strychnin, there is a chance of a gradual separation of carbon dioxid, converting the bicarbonate into a carbonate which may produce precipitation of strychnin to the extent that a fatal dose is given at the last. Elix. digest. comp. is an entirely superfluous component of the prescription so far as therapeutic value is concerned.

REMOVAL OF BIRTHMARKS

To the Editor:—Under my care I have a girl 5 years old who has a birthmark on the dorsal surface of the wrist and a portion of the hand. The skin is of a deep brownish color, indurated and is quite hairy. What is the most approved method and what is the most practical technic for removing this mark?

J. F. RIORDAN, M.D., Berlin, Wis.

ANSWER.—The best method of treating such pigmented hairy nevi is by repeated freezings over the area with solidified carbon dioxid (after the method introduced by Pusey). Areas not larger than ¾ inch square can be frozen at one application; if the area to be treated is large, it can be frozen by repeated applications to adjacent areas at one sitting. It is well to begin with applications not longer than twenty seconds and increase their length to thirty, forty or sixty seconds at later sittings if it should be found necessary. A series of treatments at intervals of a few weeks—from three to eight—may be necessary to attain the greatest possible improvement. It is better to do too little at each treatment and repeat the treatments than to proceed too vigorously and produce an unnecessary amount of scarring. With care, patience and intelligence even large pigmented nevi can be almost entirely removed with little scarring.

Before freezing a hairy nevus the hair should be shaved off or clipped very close, and as a precaution the surface washed with an antiseptic solution. The pain of the applications is slight; a 5-year-old child will usually stand a treatment without resistance, if not too many areas are frozen at one time. The frozen area swells like a mosquito-bite or a beesting; the disappearance of this swelling can be hastened by bathing in hot or cold water. Bathing also diminishes the evanescent discomfort following the freezing.

AUTOGENOUS VACCINE THERAPY IN EPIDEMIC OF TONSILLITIS AND ACUTE ARTHRITIS

To the Editor:—This community has been infested this year with a lot of infectious tonsillar trouble, which manifested itself later in a great deal of infectious joint troubles. What bacterin might possibly be advantageously used?

CHARLES H. STARKEL, M.D., Belleville, Ill.

ANSWER.—Smears of the throat should be taken and the micro-organism which seems to be the cause of the disease should be obtained in pure culture. In the case referred to it would be well to look for streptococci, as these have been the cause of a number of epidemics of sore throat recently reported. An autogenous vaccine should be made from the organism which seems to be the cause of the trouble. It has been shown that such epidemics are spread through the milk-supply; therefore this should be carefully investigated. The following references indicate the importance which this subject has assumed within the last two years:

Milk-Borne Tonsillitis, editorial, THE JOURNAL, Nov. 11, 1911, p. 1618.

Davis, D. J., and Rosenow, E. C.: An Epidemic of Sore Throat Due to a Peculiar Streptococcus, THE JOURNAL, March 16, 1912, p. 773.

Hamburger, L. P.: An Epidemic of Septic Sore Throat in Baltimore and Its Relation to a Milk-Supply, THE JOURNAL, April 13, 1912, p. 1109.

Stowell, E. C., and Hilliard, C. M.: Comparison of Streptococci from Milk and from Human Throat, *Am. Jour. Dis. Child.*, May, 1912; abstr., THE JOURNAL, June 22, 1912, p. 1997.

Capps, J. A., and Miller, J. I.: The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply, THE JOURNAL, June 15, 1912, p. 1849.

Davis, D. J.: Bacteriologic Study of Streptococci in Milk in Relation to Epidemic Sore Throat, THE JOURNAL, June 15, 1912, p. 1852.

McKinney, R.: Streptococcus Infections of Throat, *Southern Med. Jour.*, June, 1912.

Luetscher, J. A.: Bacteriology of Epidemic Sore Throat, THE JOURNAL, Sept. 14, 1912, p. 869.

Heinemann, P. G.: The Epidemic of Sore Throat in Chicago, THE JOURNAL, Aug. 31, 1912, p. 716.

Capps, J. A.: The Rôle of Milk in the Causation of the Chicago Epidemic of Sore Throat, THE JOURNAL, Nov. 9, 1912, p. 1715.

The Clinical Manifestations of Epidemic Sore Throat, editorial, THE JOURNAL, Nov. 23, 1912, p. 1894.

Rosenow, E. C.: Study of Streptococci from Milk and from Epidemic Sore Throat and the Effect of Milk on Streptococci, *Jour. Infect. Dis.*, November, 1912; abstr., THE JOURNAL, Dec. 21, p. 2286.

The Source of the Streptococci in Epidemic Sore Throat, editorial, THE JOURNAL, Jan. 4, 1913, p. 51.

Hamburger, L. P.: Baltimore Epidemic of Streptococci or Septic Sore Throat and Its Relation to Milk-Supply, *Bull. Johns Hopkins Hosp.*, January, 1913.

Stowell, E. C.; Hilliard, C. M., and Schlesinger, M. J.: Statistical Study of Streptococci from Milk and from Human Throat, *Jour. Infect. Dis.*, March, 1913; abstr., THE JOURNAL, April 5, 1913, p. 1106.

The close relation of tonsillitis to acute arthritis (acute rheumatism) is now well recognized. It is probable that the tonsil forms the port of entry for the infecting organism. The following recent articles may be referred to in connection with this subject:

Schichhold, P.: Tonsillectomy in Treatment of Rheumatism and Other Infections, *München. med. Wchnschr.*, Feb. 8, 1910; abstr., THE JOURNAL, March 19, 1910, p. 1016.

Pickenbach: Importance of Tonsillitis in Etiology of Acute Rheumatism, *München. med. Wchnschr.*, April 5, 1910.

Hess, K.: Importance of Tonsil Region in Relation to Acute Articular Rheumatism and Heart Disease, *Med. Klin.*, Nov. 21, 1910.

Higgs A. K.: Relation Between Diseased Tonsils, Rheumatic Fever and Heart Disease, *Northwest Med.*, November, 1911; abstr., THE JOURNAL, Dec. 9, 1911, p. 1944.

Symposium on Chronic Focal Infections: Their Relation to Disease of the Heart, Kidney and Joints, THE JOURNAL, Dec. 30, 1911, p. 2169.

Billings, F.: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, *Illinois Med. Jour.*, March, 1912; abstr., THE JOURNAL, Dec. 30, 1911, p. 2169.

LITERATURE ON PURIFICATION OF DRINKING-WATER

To the Editor:—I am desirous of obtaining some information in regard to the sterilization of drinking-water, and should be greatly indebted to you if you would refer me to any literature describing the various methods which are used in the United States.

F. E. C., New York.

ANSWER.—Following is a list of recent articles on this subject:

The Purification of Water with Bleaching-Powder, editorial, THE JOURNAL, Oct. 16, 1909, p. 1293.

The Purification of Water by Hypochlorites, editorial, THE JOURNAL, Aug. 20, 1910, p. 699.

Chamberlain, W. P.: Effect of Ultraviolet Rays on Amebae; Use of These Radiations in Sterilization of Water, Philippine Jour. Sc., November, 1911; abstr., THE JOURNAL, March 23, 1912, p. 892.

Cooper, A. Y.: Some Tests of the Efficacy of Chlorinated Lime in Purifying Drinking-Water, Military Surg., May, 1912; abstr., THE JOURNAL, June 8, 1912, p. 1817.

The Increasing Use of Calcium Hypochlorite in Water Purification, editorial, THE JOURNAL, Jan. 27, 1912, p. 279.

Stokes, W. R., and Hachtel, F. W.: Some Results of the Treatment of the Baltimore Drinking-Water by Calcium Hypochlorite, THE JOURNAL, Oct. 26, 1912, p. 1565.

Scharff, M. R.: Experiments on Disinfection of Water with Ultraviolet Light, with Laws of Disinfection, Jour. Infect. Dis., May, 1912.

Clemesta, W. W.: Use of Ultraviolet Rays in Sterilization of Water, Indian Med. Gaz., July, 1912.

Powell, S. T.: The Water-Purification Works of the Baltimore County Water and Electric Company, THE JOURNAL, Sept. 14, 1912, p. 875.

Hering, R.: Methods of Water Purification of Large Cities, THE JOURNAL, Feb. 8, 1913, p. 411.

The Hypochlorite Treatment of Water-Supplies, editorial, THE JOURNAL, Jan. 18, 1913, p. 211.

MUCH-HOLZMANN PSYCHOSIS TEST—WEIL COBRA VENOM TEST—NOGUCHI BUTYRIC ACID TEST

To the Editor:—1. What is the Much-Holzmann psychosis test? 2. What is the Weil cobra venom test for syphilis? 3. In Noguchi's "Serum Diagnosis of Syphilis," p. 157-159, instructions are given that in using the Noguchi butyric acid test on the cerebrospinal fluid one should boil the mixed reagents and spinal fluid. In the directions for using the butyric acid method with the blood-serum no mention is made regarding the heating of the precipitated globulin, dissolved in the normal salt solution, to which the butyric acid is added. Is it necessary to boil the reagents in testing the cerebrospinal fluid and not in case of the blood-serum?

EDWIN E. HUTSHING, Napa, Cal.

ANSWER.—1. The Much-Holzmann test is a test used for the presence of dementia praecox. It consists in the use of cobra venom together with red blood-cells. The cobra venom causes a hemolysis of the red blood-cells in the absence of dementia praecox. If the serum of a patient with dementia is added to the mixture of the cobra venom and red blood-cells the hemolysis is almost completely inhibited. (See article by Much and Holzmann, *München. med. Wchnschr.*, May 18, 1909, p. 1001. Also A. J. Rosanoff: The Much-Holzmann

Serum Reaction in Insanity, *Arch. Int. Med.*, October, 1909, p. 405.)

2. The Weil cobra venom test for syphilis is essentially similar. The technic of this test is described in THE JOURNAL, April 19, 1913, p. 1247.

3. The reason that heat is not applied in the case of the test of blood-serum by means of butyric acid is that the amount of globulin is here much richer than in the cerebrospinal fluid, and the reaction takes place with sufficient rapidity without the aid of heat. In cases, however, in which one deals with a very much smaller quantity of the blood-serum, it is helpful to heat it.

It should be noted that a recent query referring to the luetin test as the Noguchi skin test was incorrectly answered in THE JOURNAL, March 29, 1913, p. 1016. The mistaken assumption was made that the query referred to the Noguchi modification of the Wassermann test. Luetin is still prepared by Dr. Noguchi exclusively.

MORPHIN AND HYOSCIN (SCOPOLAMIN) IN LABOR

To the Editor:—Please inform me in regard to the use of morphin and scopolamin hydrobromid hypodermically in confinement cases. Is it perfectly safe, and if there are objections, what are they? Is there any objection to this more than to morphin and atropin?
H. B. FITTS, M.D., Provincetown, Mass.

ANSWER.—Scopolamin (hyoscin) and its salts are nearly allied in origin and composition to atropin. The chief difference between them is in their physiologic and therapeutic action on the central nervous system. Atropin in moderate or therapeutic doses is somewhat of an excitant. Scopolamin is rather a sedative or depressant. For this reason atropin is antagonistic to morphin and is therefore employed to counteract the analgesic effects of morphin on the respiratory centers. Scopolamin is a cerebral sedative and hence in regard to its action on the nervous system a synergist to morphin.

A few years ago it was proposed to use morphin and scopolamin in labor and give a sufficient amount to render and keep the patient in a semiconscious state *(Dämmerschlaf)*. This plan was tried out in several German clinics but seems to have been generally abandoned. The objections to it have been danger to the child and disturbance of normal labor.

WHISKY BLENDS

To the Editor:—I want certain information concerning the pure food act as it relates to the blending of whisky. On good authority, I stated to a group of university club young men—some lawyers—that a blend was a fraudulent device, though authorized by a ruling of Mr. Taft. The article is a mixture of a little good whisky, cheap alcohol, vegetable extracts and coloring matter. The lawyers said that the government not only authorized the blend, but had a formula for it which was carried out in the mixture before it left the warehouse with the stamp of the government. This was news to me, and I hesitated to accept the statement. My understanding is that when whisky leaves the warehouse with the government stamp it is straight whisky—130 proof. That the practice of dealers and clubs is, on account of its strength, to reduce it about 30 per cent. with simple water, making the proof about 90, and in this condition it is bottled and government stamp put over the cork. This is not a blend, but the dishonest dealer adulterates it in the manner previously stated and then it is a blend. This is true, or there is no reason for the mixture. The plea that the fragrance and flavor are improved by the blend is simply a fraudulent device to deceive and to sell a cheap whisky at greater cost than a pure one. The latter can be flavored safely if necessary. Purity is no bar to it, certainly. There is much public misapprehension as to the law and the facts, and I believe an exposition in THE JOURNAL would be well received.
M.D., Denver.

ANSWER.—Under the Food and Drugs Act, the term "blend" is used to denote a mixture of "two or more like substances."

In April, 1906, the Department of Agriculture issued a decision (F. I. D. 65), sometimes called the Roosevelt whisky decision, which declared, in intent, that "straight whisky" and "neutral spirits" were unlike substances. With this as a basis, it was ruled that:

"Straight whisky will be labeled as such.

"A mixture of two or more straight whiskies will be labeled 'blended whisky' or 'whiskies.'"

"A mixture of straight whisky and ethyl alcohol, provided there is a sufficient amount of straight whisky to make it genuinely a 'mixture' will be labeled as compound of, or compounded with, pure grain distillate.

"Imitation whisky will be labeled as such."

Naturally, this decision was not acceptable to certain of the whisky interests. The result was another decision issued in 1910 sometimes referred to as the Taft decision. According to this decision, straight whisky, rectified whisky, redistilled whisky and neutral spirits whisky are "like substances" and any of them may be labeled "whisky" without qualification. To quote from the decision:

". . . All unmixed distilled spirits from grain, colored and flavored with harmless color and flavor, in the customary ways, either by the charred barrel process or by the addition of caramel or harmless flavor, if of potable strength not less than 80 degrees proof, are entitled to the name whisky without qualification. If the proof be less than 80 degrees, i. e., if more water be added, the actual proof must be stated on the label and this requirement applies as well to blends and compounds of whisky" (F. I. D. 113).

Naturally, under this decision, mixtures of straight whisky with neutral spirits whisky may be labeled a "blend" because they are mixtures of "like substances." We believe that it makes no difference what the proportions are of the component parts in a "blend."

A mixture of straight whisky with alcohol derived from something other than grain, must be labeled a "Compound." The Attorney General decided, in December, 1908, that the amount of whisky in a "compound" must equal or exceed one-third in volume of the spirituous content.

PRESCRIBING THYMOL IN LIQUID PETROLATUM

To the Editor:—It is asserted that purified petroleum, or "liquid vaselin," is not emulsified or absorbed by the intestinal mucous membrane. If this is true, will you kindly inform me if there would be any danger in giving thymol dissolved in liquid petrolatum, provided, of course, that no other fats or oils were taken?
C. H. WOOD, M.D., Glendora, Cal.

ANSWER.—So far as we can see, there would be no objection to prescribing thymol in liquid petrolatum. While the petrolatum would dissolve the thymol it would not tend to facilitate its absorption, because it is not itself absorbable and the thymol would need to pass through a watery liquid, in which it is only very slightly soluble, before it could reach the blood.

THE VERB "MASSAGE"

To the Editor:—Please state the correct verb to use in expressing the act of performing massage, and its proper pronunciation. For example, which of the following sentences is correct, and if both are correct which is preferable?

"The nurse was asked to masser (massay) the breast."
"The nurse was asked to massage (massazh) the breast."
INQUIRER.

ANSWER.—The second sentence is correct. Massage is the verb in common use. Massé is used rarely. Masser, the French verb (of which massé is the past participle), is not used in English. The pronunciation has been indicated correctly by our correspondent. Massage is accented on the second syllable; the first a is short as in ran, the second a has the Italian sound as in alms, the s's are hissed, and the ge is sounded soft as the si in vision. Massé is accented on the second syllable and the é is pronounced like the a in ape.

REQUEST FOR SPECIMENS IN RESEARCH WORK ON THE SKULL

To the Editor:—I am doing research work on the topographic anatomy of the base of the skull. I desire specimens which do not conform to the generally accepted type described in text-books. If any physician who has such a specimen will send it to me, I will return it to him and give him credit in any monograph I may publish.
L. J. GENELLA, M.D., 922 S. Carrollton Avenue, New Orleans.

Miscellany

Communicable Diseases Among the American Indians

It has been known for some time that conditions of sanitation and public health among the American Indians are far from satisfactory. This knowledge has been emphasized in the reports of the Commissioner of Indian Affairs and commented on in THE JOURNAL at different times (Health Work Among Indians, editorial, THE JOURNAL, May 18, 1912, p. 1515; Health of the American Indian, editorial, ibid., March 15, 1913, p. 832); but no definite information was available as to the prevalence and seriousness of communicable disease among the Indians throughout the United States until the survey made last fall by the Public Health Service. This

survey was conducted in accordance with an act of Congress of Aug. 24, 1912, appropriating $10,000 for a thorough examination "as to the prevalence of tuberculosis, small-pox, trachoma and other contagious and infectious diseases among the Indians of the United States," the final report to be made Feb. 1, 1913. This report was sent to the Senate, Jan. 23, 1913, by the secretary of the treasury (Senate Document 1038, Sixty-Second Congress, third session).

The investigation included an examination of the available data and records at Indian schools and agencies and of state boards of health, the examination of Indians in boarding-schools and reservations, the inspection of sanitary conditions having a bearing on the propagation of communicable diseases, and house-to-house visits on as many reservations as possible. The investigation extended from Sept. 28 to Dec. 30, 1912. In all, 39,231 Indians were personally examined, constituting approximately one-eighth of the total Indian population of the United States. Boarding-schools in twenty-five states were visited. The extent of this field of survey makes it probable that the results are typical for the entire Indian population, and that the conclusions drawn are accurate.

It was found that tuberculosis and trachoma are playing fearful havoc among the Indians, these being by far the most deadly diseases. Of the 39,231 Indians examined, 8,940 or 22.7 per cent. suffered from trachoma. At this rate about 72,000 Indians altogether are trachomatous. The disease is most serious in that it is a common cause of reduced physical and economic efficiency, mental retardation and actual suffering. The highest incidence of trachoma was found in Oklahoma, where it reached 68.6 per cent. In New York the lowest incidence was found of 0.2 per cent. A high rate was found also in Wyoming with 51 per cent.; Nebraska, 41 per cent.; Utah, 39 per cent.; Iowa, 32.04 per cent.; Nevada, 26.9 per cent.; Arizona, 24.9 per cent.; North Dakota, 22.9 per cent., and New Mexico, 22.3 per cent.

The Indian boarding-schools represent one of the most important agencies through which the federal government is seeking to educate and improve the condition of the Indian race. Hence it was considered that the incidence of trachoma in these schools was of the utmost concern. Data were collected from 133 of these schools with the following results: Among 16,470 pupils were found 4,916 cases of trachoma, or 29.8 per cent. The highest was in the Rainey Mountain School in Oklahoma, where 105 out of 114 pupils examined had trachoma, a percentage of 92.1. Throughout the Oklahoma Indian schools the average incidence of this disease was 69.1 per cent. Three schools alone, one in Wisconsin and two in New York, were free from trachoma. This was explained in turn by the absence of trachoma in the populations from which these schools drew their students. In 68 of the 133 schools the percentage of trachoma ranged from 25 to 90. It was found to be more generally prevalent in the schools than on the tributary reservations, and in non-reservation schools, groups of pupils from sections which were practically free from trachoma showed a high incidence of the disease. It is a fair inference that many students contracted the disease at such non-reservation schools and that they could easily spread it to new localities.

The situation in day schools is similar to that in boarding-schools. Of 3,488 day pupils examined, 752, or 21.5 per cent., had trachoma. In Arizona 41.3 per cent. of 990 Indian day schoolchildren were trachomatous. This was much in excess of the general rate for the state of 24.9 per cent. In New York 335 day pupils presented no cases of the infection. Trachoma was present in the Indian day pupils in all the states except New York. It would seem that the high incidence in the boarding-schools is due to the direct spread of the disease among the inmates.

Of 17,822 reservation Indians above and below the school age examined, 3,064, or 17.2 per cent., suffered from trachoma. In this class of Indians Oklahoma showed a trachoma incidence of 60.4 per cent.; Utah, 39.2 per cent.; Wyoming, 37.2 per cent.; Nevada, 36.5 per cent., and Montana, 30.7 per cent. In general trachoma was found most prevalent in Indians of school age, over half the patients being between 6 and 20 years of age, and it was slightly more prevalent in females than in males. Full-bloods were more prone to the disease than mixed bloods, but this is probably explained by the more prosperous condition and better living-habits of the latter.

The damage to vision from trachoma was marked. In a group of 23,560 Indians, 5,505 had trachoma and 527 had sustained serious damage to vision; 141 were blind in one or both eyes. This does not represent the total damage to vision from trachoma, as a large part of those examined were school-children in whom the disease had not yet progressed far enough to produce serious complications. It is considered that 75 per cent. of untreated trachoma cases result in permanent injury to vision. It seems that trachoma has existed in the Indians in widely scattered sections for many years, but no reliable data could be obtained as to its actual origin or duration.

Trachoma has usually been considered a disease of immigrants from its known prevalence in Russia, eastern Germany, parts of Austria-Hungary, and in Italy, Greece and Spain. But it has only lately been considered as possessing dangerous endemic foci in the United States. The recent work of McMullen in Kentucky (see Trachoma in the United States, editorial, THE JOURNAL, Nov. 30, 1912, p. 1978), who found 12.5 per cent of 3,974 persons examined to be trachomatous, of Foster and Krulish in Alaska, and the present survey of the American Indians serve to show the true situation.

The reports on the prevalence of tuberculosis probably give a considerable underestimate of its real incidence because the examiners were forced by the exigencies of time and territory to examine physically only suspects, and because much of their work was done in the boarding-schools, from which tuberculous children are excluded. The result was the finding of an artificially reduced prevalence in a proportionately large group of Indians, but even so tuberculosis shows a wide incidence. The infection was more common in the primitive and less civilized Indians, as among the Nevada Piutes, with a rate of infection of 32.6 per cent. Certain Oregon reservations were highly affected, as the Siletz reservation with 24.5 per cent., Klamath Lake with 20.2 per cent., Umatilla with 20.6 per cent., and Warm Spring with 22.7 per cent. New York had the lowest state incidence with 1.2 per cent. These Indians are prosperous and live very much like their rural white neighbors.

In the north and northwest the incidence of tuberculosis ranged from 15 per cent. among the Sac and Fox Indians of Iowa, and 12.1 per cent. among the Montana Indians, to 2.3 per cent. in Michigan. In the southwest the highest incidence was shown by the Jicarilla Apaches of New Mexico and the Walapais of Arizona with 9.4 per cent. and 14.9 per cent., respectively. The well-fed and prosperous Navajo and Zuñi tribes of New Mexico had a low incidence. In New Mexico 1,225 Indian schoolchildren were tested by the von Pirquet tuberculin reaction, with a great variation in percentage of positive results in different tribes. Among the Jicarilla Apaches 95.5 per cent. of the children over 11 years of age gave positive reactions. On the other hand, the percentage of positive reactions in the Taos Indian children was only 1.4 per cent.

The conclusion is drawn that tuberculosis is much more common among Indians than in the white race, depending on the locality, and that the situation is so serious as to require the prosecution of vigorous measures for its relief.

As among the whites, the prevalence of small-pox in the Indian population seems to bear a close relation to the thoroughness of vaccination. Only six actual cases of small-pox were found among the 39,231 Indians examined. Superintendents and reservation physicians should be held to strict account for the thoroughness of vaccination in their respective districts.

Strangely enough, typhoid fever is surprisingly rare among the Indians. No cases were found in the survey. In part at least this rarity is explained by the facts that the disease has not yet been extensively introduced among the Indians, that the water-supply is comparatively safe, and that the Indian is not a milk drinker. Closer contact with whites, however, will determine a greater prevalence of typhoid.

Scarlatina and diphtheria are uncommon with the Indians, while measles is frequent and is apt to be attended with a

considerable mortality. Whooping-cough, chicken-pox and mumps are common. Among the reservation Indians venereal disease is rather infrequent, syphilis being less common than gonorrhea; but neither disease is found extensively.

In general, sanitary conditions on reservations are unsatisfactory. Small, overcrowded, ill-ventilated and dirty houses are the rule. Personal and social habits favor the spread of disease. In most schools trachomatous pupils mingle freely with the others, and washing and toilet facilities were often inadequate and obsolete. Imperfect screening against flies was noted, and medical and sanitary supervision were not satisfactory.

The Indian is being brought into constantly closer relations with whites by the opening to settlement of Indian lands, by improved transportation facilities, and by the gradual process of assimilation with the general population. These facts make the control of communicable disease among Indians, and the prevention of their spread to neighboring races, an important public health problem. The great point is not so much the treatment of individual diseases and patients—work which is in large measure nullified by the ignorance and indifference of the Indian—but the improvement of sanitary conditions which are responsible for these diseases. The collection of vital statistics was found to be very imperfect on most reservations, and often they were not preserved and compiled with proper care.

Indian boarding-schools have without doubt been an important factor in the spread of trachoma, as also the presence of flies in the spread of trachoma and tuberculosis. The insanitary condition of most Indian schools is laid to the presence of one or more of the following factors: overcrowding, inadequate equipment, imperfect sanitary supervision and lack of observance of necessary sanitary precautions. The conclusion is stated in the report that the medical branch of the Office of Indian Affairs is hindered from doing effective work by (*a*) insufficient authority in medical and sanitary affairs; (*b*) existing obstacles such as racial characteristics, present economic status of the Indian and varying physical conditions on the reservations, and (*c*) inadequate pay, absence of reasonable expectation of promotion, and lack of *esprit de corps* and coordinated organization (see Organization of Physicians in the Indian Service, news department, THE JOURNAL, Feb. 8, 1913, p. 458; Physicians in the Indian Service, current comment, ibid., p. 454).

The recommendations embodied in the report to the Senate are general, and indicate broad principles of action capable of modification to meet diverse local requirements. The improvement of sanitary conditions among the Indians should be effected by (1) improving the economic status of the Indian, as fast as possible making him self-supporting and a property owner; (2) education in personal and domestic hygiene, and the prevention of contagious and infectious disease; (3) improvement of housing conditions, including the preparation of designs for the cheapest and most sanitary dwellings for the various climatic conditions of the various reservations, and the requirement that all dwellings built in the future should conform to approved designs; (4) so far as practicable restriction of one family to one house; (5) provision of sanitary privies for permanent houses and camps; (6) division of reservations into sanitary districts according to size and density of population, each district to be under the control of a medical officer who should be held to strict account for the sanitary condition of his district; (7) an accurate census of each sanitary district, including the sanitary condition of all dwellings and the physical condition of all persons; (8) regular sanitary inspections of all districts, dwellings, boarding-schools and day schools for the discovery and abatement of nuisances; (9) giving medical officers full authority as sanitary officers; (10) placing medical officers under the control of a distinctly medical bureau; (11) the permanent recording of vital statistics, and (12) practically a reorganization of the Indian Medical Service with increased pay in order to increase efficiency.

Special hospitals and clinics for tuberculosis and trachoma should be instituted, and victims of these diseases should be in separate schools and away from chances to extend the infection. An excellent suggestion is that steps be taken at once to put in thoroughly good sanitary condition some one reservation now having a high incidence of disease. This would serve as a demonstration of the practicability and benefits of sanitation.

This survey is most timely, and its conclusions merit sober consideration. It has been pointed out in THE JOURNAL that the Indian race in America is increasing (Health of the American Indian, editorial, THE JOURNAL, March 15, 1913, p. 832). The misinformation in the past regarding actual disease among them is well exemplified in the erroneous idea of the wide prevalence of venereal disease. Now with a positive basis of knowledge as to actual conditions obtaining, it is possible effectively to meet the situation. The recommendations embodied in the report from the Public Health Service are based on definite facts and should be carried into effect without delay.

U. S. Senate Asked to Investigate von Ruck Remedies and Methods

The following is taken from the *Congressional Record* of May 26, 1913:

TREATMENT OF TUBERCULOSIS IN NORTH CAROLINA

MR. OVERMAN: I submit a resolution, which I ask may be read, and I ask unanimous consent for its present consideration.

The resolution (S. Res. 89) was read, as follows:

Resolved, That the Secretary of the Treasury be, and is hereby, requested to institute, through the Bureau of the Public Health, an investigation of the practices and methods employed by Drs. Karl and Sylvio von Ruck, of Asheville, N. C., in treating tuberculosis and in rendering persons immune from tuberculosis, and to report to the Senate as soon as practicable whether the vaccine used by the said Drs. von Ruck in attempting to render persons in health immune to tuberculosis is successful in immunizing those thus vaccinated.

MR. GALLINGER: Mr. President, I do not rise to object, because we want all the light we can get on this important subject; but it occurs to me that this tuberculosis-vaccine controversy seems to be running riot. We have Dr. Friedmann making claims for a remedy that has been shown to be practically worthless, and we have now a physician in Chicago, Dr. Duket, who assures the country that he has a serum that is a certain cure for tuberculosis. I have very grave doubts myself as to the efficacy of any of these serums; but the Senator from North Carolina thinks that the resolution ought to pass and I will not object, although I doubt the propriety of the government officially engaging in such investigations.

MR. OVERMAN: Mr. President, I wish to suggest that with Dr. von Ruck this is no new matter. He has a hospital in western North Carolina, and numbers of patients have been cured by him. There is a Senator on this floor who could rise and testify that he has been cured by this treatment. If we can investigate a foreigner and his methods, I do not see why we should object to the examination of those of an American who, I think, has really the vaccine matter that will do the work.

MR. GALLINGER: As I heard the resolution, Mr. President, I understood it to mean that this is a serum that makes persons threatened with tuberculosis immune from the disease. Is that it?

MR. OVERMAN: Yes.

MR. GALLINGER: Is it also claimed to be a cure for the disease when it actually exists?

MR. OVERMAN: It has really cured many people, and our leader, the Senator from Indiana (Mr. Kern), I do not mind stating, says that he was cured by it and that he would be willing to give testimony to that effect.

MR. GALLINGER: We can readily get testimony that men have been cured of all sorts of diseases by all sorts of remedies, but that really proves very little.

MR. OVERMAN: There is no harm in adopting the resolution.

MR. GALLINGER: There is no harm in it, except that it establishes a bad precedent; but I will not object.

MR. OVERMAN: There is no harm in allowing the government to investigate the matter.

The VICE-PRESIDENT: The question is on agreeing to the resolution.

The resolution was agreed to.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, MINNEAPOLIS, JUNE 17-20

American Academy of Medicine, Minneapolis, June 13-15.
Amer. Medico-Psychological Assn., Niagara Falls, Can., June 10-13.
American Proctologic Society, Minneapolis, June 16-17.
Conf. of State and Prov. Boards, St. Paul, June 13-14.
Maine Medical Association, Portland, July 2-3.
Massachusetts Medical Society, Boston, June 10-11.
New Jersey Medical Society, Spring Lake, June 10-12.
North Carolina State Medical Society, Morehead City, June 17.
Washington State Medical Association, Everett, July 14.

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-Seventh Annual Meeting held in Washington, D. C., May 6-8, 1913

Under the presidency of DR. A. R. SHANDS, Washington, D. C.

The following officers were elected for the ensuing year: president, Dr. G. G. Davis, Philadelphia; vice-presidents, Dr. T. L. Starr, Toronto, and Dr. L. W. Ely, Denver; secretary, Ralph R. Fitch, Rochester, N. Y.; treasurer, Dr. John L. Porter, Chicago. The meeting next year is to be in Philadelphia.

SYMPOSIUM ON SCOLIOSIS

The Normal Positions of the Spine and Their Relation to Lateral Curvature

DR. E. G. ABBOTT, Portland, Maine: The normal spine may be flexed in almost any position. In childhood, the vertebral column is very flexible. The adult spine has no such free motion, so that the changes from one direction to another are not so noticeable in it. It is easy to place the normal spine in any position or combination of positions. In the scoliotic spine, on the contrary, it is often necessary to use considerable force in order to accomplish this in certain directions. A normal spine may be held in a wrong position until typical changes of scoliosis take place and the deformity becomes fixed. The position, which at first is actively assumed through the muscular effort, soon becomes habitual; and habitual assumption of it seems to develop a typical scoliosis. In the latest experiments for proving the effect of muscular action on the spine not all methods of arriving at final conclusions have been exhausted, and the subject still demands further consideration before absolute statements should be made.

Prognosis in the Treatment of Lateral Curvature

DR. JOHN L. PORTER, Chicago: There are some general facts which have a bearing on prognosis which should be considered: (1) the cause of the deformity; (2) age at onset; (3) age of the patient; (4) type of the deformity; (5) the patient, and (6) incidental benefit of treatment. We have all found our greatest success between the ages of 12 and 20, and in cases not due to congenital bone defects. We all know what a help it is to deal with an optimistic, alert, interested patient who is anxious to help. Low general health, disposition, etc., often improve with improvement of the scoliosis.

Correction of the Fixed Types of Lateral Curvature, Complicated by Visceral Derangements

DR. ROLAND O. MEISENBACH, Buffalo, N. Y.: It is a well-known fact that in most of the cases of lateral curvature there are necessarily secondary changes in other parts of the body. We should not attempt to build the patient up by medication and thereby lose time, but after the spine is corrected other measures may be undertaken with better results. Cardiac lesions, especially functional, due to pressure, may improve after correction, and are not increased. In cases of the severest type with greatest deformity of the spine and derangement of the viscera, treatment should be undertaken cautiously, with a view to improving the general condition of the patient.

The Rotation Treatment of Lateral Curvature

DR. A. MACKENZIE FORBES, Montreal: The rational treatment of scoliosis is to place the parts in a position as far removed from deformity as possible, and to retain them in this new position until they shall have become changed by Wolff's law. In the past our results in treating scoliosis have not been brilliant; this is because it is not a deformity of the spine alone, but also of the trunk and thorax. We have assumed that the spinal deformity was the cause of the other two, and our treatment has been directed wholly against this. The usual form of treatment was by side-bending, but I prefer rotation, because I can obtain as much correction as possible by rotation, and because the position of rotation is well borne. Rotation can be secured without any apparatus at all, but I use a more or less complicated apparatus and am constantly changing it. The accepted form of treatment is the production of physiologic scoliosis by rotation on the side opposite to the pathologic scoliosis.

DISCUSSION

DR. WALTER TRUSLOW, Brooklyn: Dr. Abbott has presented a decided advance in the treatment in giving us the flexed position. I wish to emphasize the importance of a third plane of space in which this deformity lies, the anteroposterior plane. If we extend the patient forward, we overcome the body lean backward. If we get the right final method, it will be a two-stage process. We shall overcome these secondary conditions first, and then the main trouble, the rotation, afterward.

DR. Z. B. ADAMS, Boston: The differences between Forbes' and Abbott's methods is that Dr. Abbott puts his patient in flexion; then he puts a circular strap around the thorax and pulls down. That increases the rotation.

DR. A. H. FREIBERG, Cincinnati: Cook takes the most convenient situation for the correction of his crook—about the middle of the dorsal region; there the deformity is most amenable to any mechanical control; but it is evident that his method would be inefficient for any other portion of the spine. His statement that if you correct the dorsal curve, the lumbar curve will take care of itself, is not well taken. On the contrary, I think that if we confine our efforts to the dorsal curve when there is a well-marked lumbar curve, it will increase the latter—simply from the action of gravity. We always find torsion and lateral deviation together, and the torsion element of the deformity is the more difficult to dispose of.

DR. S. KLEINBERG, New York: Out of fifty-two cases which I have treated by the Abbott method, seven have been overcorrected, twenty-two have been markedly improved, and twenty-one have not improved at all, while two have been made worse. It is impossible to say in advance at what point improvement is going to appear. We have to depend a great deal on the posture. The breathing has a great deal to do with the cure also. It seems impossible to influence the high cervicodorsal deformity, and even with severe lumbar curves I have had but little success.

DR. MICHAEL HOKE, Atlanta, Ga.: Some methods named after the men who devised them seem to fail to give satisfaction in the hands of others. This is because one cannot apply these methods universally to a given number of cases, without carefully differentiating between the details of the given cases. In many instances in which failures occur, it is the fault of the operator and not of the method. It is good to advocate the rotation, the breathing, the fixation and the

lateral pressure treatments in scoliosis. Different forces have to be applied to different parts. The method should not be attacked, but the good in each method should be utilized; and when there is failure we should criticize our way of applying the method.

DR. JOHN DANE, Boston: Dr. Meisenbach has done a wise thing in drawing our attention away from the side of the spinal deformity and toward the side of the deformity of the trunk and thorax in scoliosis. I believe that it is impossible to have any irritation around the dorsal branch without having a reflex sent to the anterior branch. Bronchial, stomach, intestinal and all sorts of functional troubles come from scoliosis.

DR. G. G. DAVIS, Philadelphia: Three different methods for obtaining correction in lateral curvature have already been published: the Abbott frame, the Forbes frame and the Adams. Dr. Elmer, in my clinic, is trying to accomplish the same object with the patient in a sitting position, using two uprights with a seat to which the patient is strapped.

DR. S. M. CONE, Baltimore: I had a case of scoliosis produced by chronic appendicitis, with a fecal impaction of the colon, which disappeared entirely with the removal of the cause.

DR. COMPTON REILLY, Baltimore: The starting-point of scoliosis is in the pelvis. I think it starts with a twist. I have been using the same apparatus to correct this deformity that I use for the spine in Pott's disease. The time is coming when we shall use no apparatus for the application of the jackets in lateral curvature, but shall simply prop up the foot, which is apparently short, have the patient bend forward, and apply the jacket in that position without any forcible apparatus.

DR. DAVID SILVER, Pittsburgh, Pa.: A great deal of improvement has come from the Abbott method. In stiff cases I have been having the patient remove the jacket morning and evening and take exercises. It has proved a good thing. In cases of paralytic curvature we must concomitantly use the exercises and movements to increase spinal flexibility.

DR. S. KLEINBERG, New York: There is a question as to whether or not the lumbar curve is associated with any pelvic deformation. In a series of twelve cases there were three or four in which there was a difference between the measurements on the two sides from the posterior superior to the anterior superior spine of the ilium.

DR. S. J. HUNKLIN, San Francisco: In cases of great rigidity I find that by having the assistant stand on a platform two feet above the floor, his back against the wall, he is able to produce side bending and flexion until the deformity disappears. Then the jacket is put on. No force is applied to the patient, and rotation is easy.

DR. H. AUGUSTUS WILSON, Philadelphia: We are at present without a standard by which to judge our results. We cannot rely on roentgenography as a means of recording conditions before and after treatment. The patients will judge our results by their personal feelings, and the parents by their children's capabilities. We should try to know accurately the conditions before, during and after treatment, the real changes that take place—not in function or in appearance, but in measurement.

DR. E. G. ABBOTT, Portland, Maine: It makes no difference what kind of apparatus a man uses so long as he can place his patient in the proper position by means of it. The position desired is that of flexion and lateral bending, with elevation of one shoulder and depression of the other. If you have a lumbar curve it is necessary to put on an additional strap to make traction and rotation there. When the curve is in the lumbar spine you must be careful in correcting it, that you do not develop a curve in the dorsal region—which should be held by a strap and prevented from bending or becoming crooked.

DR. JOHN RIDLON, Chicago: My advice is treat the cases as they seem to demand. It is absurd to undertake to treat them all one way.

DR. B. E. MCKENZIE, Toronto: In treating these cases one should bear in mind the fact that he is dealing with an individual, and not simply with a deformity. In treating postural deformities I should exclude mechanical means, such as brace, jacket, etc. We are using the Abbott jacket, and I am satisfied that in difficult structural cases it is of great benefit.

DR. JAMES K. YOUNG, Philadelphia: We are using the Abbott method and are much pleased with the results obtained from it, but the cases must be selected carefully. The age of the patient is important. A patient of 22 does much better than one of 14.

DR. D. D. ASHLEY, New York: I believe that there is a great deal in the technic for every one of us to learn. I have secured better results with my growing patients. I have found girls of 16 or 18, very small and thin-ribbed, whom it has been impossible for me to correct. Their ribs are elastic and will bend into apparent correction, but when we put the Roentgen ray on such patients we find but little modification of our scoliosis.

DR. H. P. GALLOWAY, Manitoba: We have all encountered those difficult cases in children whose deformity is due to poliomyelitis, and watched them grow worse, year after year, and felt the difficulty of controlling them. I have thought of trying the experiment of bone-grafts in producing a fixation of the spine in such cases. I do not think we should be doing a great deal of harm by fixing or solidifying the vertebrae in the corrected position. I hope that some one will try that method of treatment.

DR. ROBERT SOUTTER, Boston: Dr. Sever's work, at the Children's Hospital at Boston, with these difficult structural cases has been wonderfully successful. He used a method of traction on the head and corrective gymnastics. In using the Abbott method I often find that in putting on a second or third jacket I obtain a correction that I could not obtain in the first or second.

DR. JOSEPH E. ROOT, Hartford, Conn.: If you will give a proportionate amount of time to the older and stiffer cases, I think that you will obtain the same results. I put all my patients in the hospital now. They can be examined every day. I have those in whom the curves are hard put in the Abbott frame every day and stretched. The breathing method is also helpful. Change the jacket every week, if necessary, and put the patients through exercises with the jacket on and off. By constant attention in the hospital, I have accomplished in one month what I have worked for two or three years to get. Such treatment means hard work, but fine results. Do not apply the jacket and then not see the patient for a week or two. The improvement is not the result of any particular method, nor is any particular method at fault when there is poor result.

DR. J. E. SEVER, Boston: I have had more experience in treating lateral curvature with the head suspension, although I think that the flexion is mechanically better. The simpler the apparatus the easier it is to put on and the better the result.

(To be continued)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-Ninth Annual Meeting, held at Washington, D. C. May 5-7, 1913

The President, DR. PEARCE BAILEY, New York, in the Chair

Present Status of Neosalvarsan in Parasyphilis of Nervous System

DR. EDWARD D. FISHER, New York: Since the finding of the spirochetes in the brain and cerebrospinal fluid in general paresis and tabes, the term "parasyphilis" must be discontinued. All diseases of the nervous system due to syphilis are due to the same active agent which is the cause of the pathologic changes both in cerebrospinal syphilis and in the more chronic manifestations formerly classed under the head of parasyphilis. The discovery of the spirochetes gives us a rational basis for the use of neosalvarsan. The question arises: What is the relative efficiency of this remedy in the later manifestations of syphilis of the nervous system, that is, in tabes and general paresis? In my experience the hopes

raised by Ehrlich's discovery have not been fully realized and cannot be. We have only to consider the pathologic changes in these diseases to understand the reason. With the Wassermann test, however, we have a rational plan of treatment in the use of neosalvarsan and mercury and the iodids. As we find the Wassermann test negative we can stop our medication and resume it as it becomes again positive. It is certainly rational to remove the active agent of disease, as we can by the use of neosalvarsan, and thus prevent extension of disease. In the light of our present knowledge, we are in a position to make an early diagnosis, and the importance of beginning treatment early is emphasized. The importance of being conservative in our claims for this most valuable remedy should be emphasized as it must be many years before we can know whether its early employment, that is, at the time of the initial lesion, prevents the later manifestations of syphilis of the nervous system.

DISCUSSION

DR. JOSEPH COLLINS, New York: I am in accord with Dr. Fisher in regard to the necessity of dispensing with the terms "parasyphilis" and "metasyphilis." I am not sure that we all recognize that tabes, general paresis and meningeal syphilis are syphilis, not nervous diseases.

DR. PHILIP COOMBS KNAPP, Boston: The clinical and pathologic distinctions thus far justify the division into ordinary syphilis and parasyphilis; this is a convenient division which I think might still be held. My experience with neosalvarsan and salvarsan has been that there is a good deal still in Ehrlich's original contention that the results are not so likely to be beneficial in syphilis of the nervous system as in the early stages of syphilis manifesting itself in other organs of the body. My experience with neosalvarsan and salvarsan in syphilis of the nervous system has not, on the whole, led me to believe that we have obtained much better results than we did with the use of mercury and iodin. In the last two months I have been trying the intraneural method, and thus far the benefits seem to be uncertain and possibly not of sufficient value to warrant the increase of danger that accompanies the use of that method.

Case of Juvenile Tabes

DR. C. EUGENE RIGGS, St. Paul, Minn.: A boy aged 7½, with no luetic history in either parent and no symptoms of hereditary syphilis, began to have gastric crises when 10 months old; they now occur every three months. There are marked ataxic gait and muscular weakness, but knee- and Achilles-jerks are absent. The Wassermann is positive in blood-serum and spinal fluid; there is no lymphocytosis and no globulin excess.

DISCUSSION

DR. PHILIP COOMBS KNAPP, Boston: Cases of juvenile tabes are very rare. I have a case now which, although not confirmed by necropsy, seems to me probably a case of juvenile tabes, in a girl of 16 of whose family history nothing can be learned. At the age of 5 her head was injured. She sustained several scalp wounds and was unconscious for a day. After that there was no trouble at all until the age of 11, when her sight began to fail. At 12 she had lost vision completely. Some one examining the eyes found optic atrophy of so-called traumatic origin. There had been a history for one or two years of typical tabetic pains, sharp, shooting pains of brief duration. On examination some perception of light and well-marked primary atrophy of both disks were found, but no indications of any keratitis and no radiating scars about the lips. The two central upper incisors were peculiar in that they were somewhat broad, but not characteristic of Hutchinson's teeth. The knee-jerks were absent on one side, and obtained only by reinforcement on the other. There is a marked Wassermann reaction in the blood and the cerebrospinal fluid, and a globulin reaction, but no increased lymphocytosis.

DR. H. M. THOMAS, Baltimore: A boy of 7 was sent to Johns Hopkins Hospital with the diagnosis of tumor, probably of the cerebellum. The child had been extremely bright up to the fifth year, when he had begun to deteriorate and then it was thought that he had an injury. His deterioration took the form of being unable to speak so well as he had before; he had been loquacious; he became noisy and fretful and hard to manage, and his walk became so unsteady that he could hardly get about. On examination, he showed no sign of hereditary syphilis. He had no choked disk; his walk was distinctly cerebellar; his pupils were distinctly unequal and did not react to light, and his reflexes were exaggerated. The boy's blood gave the positive Wassermann reaction and the diagnosis of cerebral syphilis was made. He was given two doses of neosalvarsan and changed markedly. He became quieter; his walk became steadier, and he left the hospital having done pretty well. On arriving home, however, he became extremely quiet, and in a week he was brought back in a different condition. At that time he was speechless; his walk was perhaps a little less ataxic; still he made no attempt to walk. The physical signs were the same. We did a lumbar puncture. He had a cell-count of 33, positive globulin and positive Wassermann, and a Wassermann in his serum was also positive. The case then seemed to be one of juvenile general paresis, and, as it was the only case, we did not venture to make that diagnosis.

Two Cases of Removal of Extradural Tumor of the Spinal Cord

DR. PHILIP COOMBS KNAPP, Boston: In 3,617 necropsies at the Boston City Hospital a tumor was found only four times, but the spinal cord was not always spared. In 1,294 patients in the neurologic service a tumor was diagnosticated ten times. In eleven cases operation has been performed, in six cases with fatal results, in four with some improvement so that the patient could get about on crutches, and in the fifth case with marked improvement followed by a return of symptoms and a second operation. Data on the operations done in Boston, fourteen of which have been reported, were collected, and showed the following results: tumor removed 8, 6 improved, 2 died; tumor partly removed 7, 3 improved, 4 died; tumor found, not removed 4, 2 improved, 2 died; lesion found, not tumor 6, 3 improved, 3 died; nothing found 6, 3 improved, 2 died, 1 result uncertain. Shersburg collected statistics of 119 operations, in which 49 patients were benefited and 42 died.

Peculiar and Undescribed Disease of the Nerves of the Cauda Equina

DRS. FOSTER KENNEDY and CHARLES A. ELSBERG, New York: During the last five years, in a large number of spinal operations, we have observed five cases alike in their histories, their clinical findings and in the peculiar swelling and discoloration of the roots of the cauda equina. We have been led to class them together in the belief that they form a definite clinical and pathologic entity. Pain was present in the back of the thighs and legs in all of the patients; atrophy of the anterior muscles with loss of the power of dorsal flexion of the foot was present in four; the objective sensory changes consisted of loss in the sacral and lowest lumbar nerves. The disorganization of the functions of the bladder and rectum was complete in four patients. The abdominal reflexes were regularly present, while the ankle-jerks were lost in four; the knee-jerks became lost coincident with the upward progress of the disease. The conditions found at operation were mainly a swelling and reddish-blue discoloration of many or all of the roots of the cauda equina. A thorough search of the literature failed to reveal any proved cases like those described. A few cases have been reported in which a clinical diagnosis of neuritis of the cauda equina was made and the condition believed to be syphilitic, but in none of these was the diagnosis verified by operation or autopsy. A similar disease has been described in the horse, and in this animal the post-mortem examination revealed a condition like that found in the patients operated on and reported. The Wassermann test both in the blood and in the cerebrospinal fluid was negative in all of the cases; therefore the condition is not luetic; nor were there any signs of a meningeal lesion.

(*To be continued*)

PEKING MEDICAL CONFERENCE

Meeting held in Peking, China, January, 1913

The Vice-President, DR. O. T. LOGAN, in the Chair

Officers Elected

The new officers are: president, Dr. D. D. Main, Hangchow; vice-president, Dr. C. F. Johnson, Tsinanfu; secretary and treasurer, Dr. H. H. Morris, Shanghai.

The next meeting is to be held in Shanghai.

The China Medical Missionary Association

This is the only national medical organization in China. It has over 500 members, all foreigners, at work in every province. On this organization, to a large extent, depends the rapidity with which the ideas of western medical science will permeate China's 400 millions.

This association holds a convention every three years. The last one took place in January at Peking. The Chinese Government did all in its power to show an appreciation of the work done by the organization throughout China.

Address by President of Chinese Republic

PRESIDENT YUAN SHI K'AI gave a reception to the delegates and in the course of an address expressed thanks for the work done, especially in those regions where the importance of sanitation is not realized. He said that through the efforts of the association sanitary knowledge and methods were being widely spread; the poor and the destitute women and children were being cared for and given the elements of an education; the plague in Manchuria two years ago had been checked; in the war between the north and the south of China the wounded were cared for; for this work the president was glad to be able to express his thanks in person. He hoped that the work would be carried on with the same zeal as heretofore for the good of all and indirectly for the strengthening of the bonds of friendship between China and the countries represented by the foreign medical missionaries.

Medical Education

The keynote of the convention was medical education. The foreign doctor in China is but a temporary necessity. What happened in Japan will some day happen in China. The preponderance of foreign doctors will decrease each year, but medical schools must first be established. The association made plans along this line to hasten the time when the Chinese will be able to care adequately for their own sick without depending on foreign assistance.

The Chinese themselves realize that for many years the help of foreigners will be needed. The problem of medical education presents a twofold difficulty. As yet there is no complete and uniform medical nomenclature, and there are but few well-equipped medical schools. The Surgeon-General of the Army and a secretary of the Bureau of Education appeared before the convention. They expressed the desire of the government for cooperation in the adoption of a uniform nomenclature as well as in the training of medical students.

Fortunately there is at present the closest sympathy between foreign doctors and the Chinese. The convention passed the following resolutions:

A most important feature of the work of medical missions in China at the present juncture is the work of training Christian young men and women that they may take their place as thoroughly qualified medical missionaries to perpetuate the work we have begun, and occupy positions of influence in the service of their country.

The association therefore considers that the object of our presence here can now best be advanced by concentrating our energies largely on the important centers approved by the association, and forming there efficient union medical colleges and specially equipped hospitals. And we would strongly recommend that all such colleges be affiliated and coordinated with other existing missionary educational institutions.

The association recommends that much of the work done in the less important stations should, wherever practicable, be placed under the charge of qualified Chinese; that missionaries of ability and experience in certain instances should be called in from these stations to the teaching centers to take part in the work of the colleges and large hospitals; and that the staffing and thorough equipment of these centers should take precedence of the opening up of new medical work throughout the country.

Recent movements in China have developed a natural desire in the people to carry out their own educational reform, and this we must recognize, and make the foreign element in our work as little prominent as possible, by having our colleges gradually and increasingly staffed and supported by the Chinese themselves.

The association considers that the minimum staff for efficient work in a medical college should be ten men on the field giving full time. This means, when furloughs, language study, etc., are taken into account, a total staff of at least fifteen fully qualified teachers, foreign or Chinese.

The association recommends that sufficient lecture and laboratory accommodation should be provided, and as liberal an equipment as possible in microscopes, models, pathologic specimens, etc.; also that clinical opportunities to the extent of three beds to each student in the final two years be considered the minimum.

The association strongly recommends that until union medical colleges mentioned below are efficiently staffed and equipped, no new medical colleges be started in China. The schools referred to beginning with the north, are Mukden, Peking, Chinanfu, Chengtu, Hankow, Nanking, Hangchow, Foochow and Canton.

As medical books in Chinese are necessary in order to carry on the instruction in our colleges and to provide medical literature for graduates, the association would urge on the missionary societies the need for arranging that suitable men should devote a large part of their time to the work of translating and preparing such books, and also the necessity for money grants for this purpose.

We have no desire to create permanently foreign institutions, and we aim and hope that these medical colleges will gradually and ultimately be staffed, financed and controlled by the Chinese themselves.

We are desirous of bringing our teaching work into line with the regulations of the Ministry of Education, and in all ways to cooperate with and assist the government of the republic in medical education so that a strong and thoroughly equipped medical profession may be established in this great land.

In the absence of the president, Dr. Philip B. Cousland, who was detained in Scotland by ill health, the vice-president, Dr. O. T. Logan of Chengteh, Hunan, presided at the various sessions of the convention.

Papers on the following were read by delegates and invited guests: "Climatic Bubo," "Vesical Calculus," "The Behavior of the Organisms in Relapsing Fever," "Notes on the Life-Cycle of Clonorchis," "Gunshot Wounds," "Asiatic Cholera," "An Experimental Study of Racial Immunity," "Sanitary Organization of China," "A Sanitary Propaganda for China," "Medical Inspection of Schools" and "The Need for Physical Training and the Establishment of Physiologic Standards in Schools."

AMERICAN SOCIETY OF TROPICAL MEDICINE

Tenth Annual Meeting Held at Washington, May 6-8, 1913

The President, DR. EDWARD R. STITT, U. S. Navy, in the Chair

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Richard P. Strong, Boston; vice-presidents, Dr. Creighton Wellman, New Orleans, Dr. Charles F. Craig, Washington, D. C.; secretary, Dr. John M. Swan, Rochester, N. Y.; assistant secretary, Dr. Allen J. Smith, Philadelphia; treasurer, Dr. Joseph D. Weis, New Orleans.

Boston was selected as the place for holding the next annual meeting.

The Value of a Course in Tropical Medicine for the Training of the Internist

DR. EDWARD R. STITT, Washington, D. C.: In the study of tropical medicine there is considerable advantage in having a school located in a temperate climate in order to warrant the necessary amount of work for mastering the subject. Marked advances have been made in the study of the diseases of the tropics by men who were not residents of tropical countries. The work of Robert Koch on the spirillum of cholera, on malaria in various parts of the world, on plague, on amebas, on the spirochete of African tick fever, and on sleeping-sickness is an example of the possibilities for original work open to men residing in temperate climates. If Koch could accomplish such signal service in the interest of tropical medicine, why cannot every internist find something of interest in the diseases of the tropics? There are great possibilities for the internist at home to check the development of infections which are brought to this country by returning soldiers, sailors, business men, missionaries and others. Rare cases of disease fail to be diagnosticated because

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the physicians at home are not familiar with the possibilities of tropical pathology. In the tropics diagnosis is made almost exclusively in the laboratory. In temperate climates the diagnosis is made partly by bedside study and partly by laboratory work. In an individual who has returned from the tropics, amebiasis, filariasis and syphilis may be present and the patient may be about attending to his ordinary business. It is the duty of the internist who sees such a patient to decide which infection is of greatest importance in the causation of the symptoms of which he complains. It is often difficult to determine the infection which is causing the most trouble and to exclude those that are of less importance. It must be remembered that pneumonia, kidney disease and heart disease are as common in the tropics as they are in the temperate climates. It is possible to give outside of the tropics that instruction which best correlates laboratory work and ward work.

Certain Features of the Physiologic Activity of White Men in the Philippine Islands

DR. WESTON P. CHAMBERLAIN, New York: Three thousand temperature observations were made in order to determine the effect of continued high atmospheric temperature on the physiologic activity of healthy white men. The average of these temperatures was 98.7 F. Sometimes an elevation of one or more degrees was found without apparent cause. The average body temperature of white men at Vancouver was 98.7 F. before drill and 98.8 F. after drill. Blonde men showed no difference in body temperature from that of brunettes. There is no apparent effect of season on the pulse- or respiration-rate and there seems to be no difference in the pulse- and respiration-rate after a year's residence in the tropics. The complexion seems to have no influence on these rates. The average pulse-rate in the men observed was 77.3 per minute. The average respiration-rate was 19.3 per minute.

On the systolic blood-pressure 5,368 observations were made. A 5-inch cuff was used. The average age of the individuals tested was 26.6 years; the average systolic pressure was 115.6 mm. On the weight, 3,040 observations were made. The first observation was made after the person had resided seven months in the tropics, and the second observation was made a year later. The amount of weight lost averaged 3 pounds, or 1.7 per cent. of the original weight. The complexion type of the person seemed to have no influence on the weight. The large men appeared to show no greater change in weight than the small men.

Blood-counts were made in 1,418 men. The red cells averaged 5,200,000 after nineteen months' residence. The hemoglobin averaged 89.6 per cent. The color index was between 0.86 and 0.87. In seventy-two soldiers the leukocytes averaged 7,304. There was an increase in the lymphocytes, 31.7 per cent. small lymphocytes, 6.9 per cent. large lymphocytes. The polymorphonuclear cells averaged 56.8 per cent. In the Arneth count there was a slight deviation to the left. The so-called tropical anemia is due to infection and not to the influence of climate. The pale color of the white men residing in the tropics is due to a cutaneous ischemia.

Urine examinations were made in 576 men, at the beginning of tropical residence and at the end of one year. In five albumin was found at the beginning of tropical residence and in six at the end of one year's residence. Casts were found in the urine of ten men at the beginning of tropical residence and in thirteen at the end of the year's residence. The specific gravity averaged 1.01 .9 at the beginning of tropical residence and 1.0197 at the end of one year's residence. Tropical renal insufficiency does not exist.

After moderate exercise there is a slight acceleration of the pulse-rate and a slight increase of systolic blood-pressure, a slight increase of respiration-rate and a slight increase of temperature, as would be expected. Exercise is as beneficial in the tropics as elsewhere. A great amount of sickness is found among the women who do not go out in the daytime. The influence of tropical residence on the nervous system under the improved conditions existing in the Philippine Islands seems to be no different from the influence of residence in the United States. The diet in the tropics is to be regulated by the patient's appetite. Men who had lived five and a half years in the Philippine Islands seem to show no difference in weight from those who had lived there nineteen months. The injurious effect of residence in the tropics commonly supposed to be due to light is probably due to excessive heat and humidity. Malaria, intestinal parasites, venereal diseases and alcohol are the causes of bad health from tropical residence.

DISCUSSION

DR. MALCOLM WATSON, Klang, Federated Malay States: As a result of thirteen years' residence in the Federated Malay States, it is my opinion that if certain infectious diseases can be excluded, the white men keep in excellent health. The real difficulty lies in avoiding infectious disease. There is more difficulty with children than with adults. Children cannot be kept away from the natives, and the standard of native thought is so different from our standard that it is almost impossible to rear children in the tropics. The association with the natives in addition to its moral aspect gives greater likelihood for the contraction of infection.

DR. CHARLES F. CRAIG, Washington, D. C.: In the Canal Zone it is a rule that every white man shall take a vacation once a year and go north. It has been found that the men lose energy after they have stayed for a long time in the Zone.

DR. CREIGHTON WELLMAN, New Orleans: The question of staleness, nostalgia and moral and social problems will be at a minimum when the facilities for amusement now to be found in the temperate climates are accessible in the tropics. Granting the control of infectious diseases, the world is open to colonization by the white man.

DR. ELMER F. OTIS, Peñuelas, Porto Rico: There are certain special infectious diseases that are more fatal to the white man in Porto Rico than to the native. Sprue is one of these infections.

DR. HENRY J. NICHOLS, Washington, D. C.: In any discussion of this question, the white woman and the white child must be considered. I accept the data that Dr. Chamberlain gives for troops, but I would not be willing to see the conclusions transferred to women and children. In the Philippine Islands the women are actually damaged by the climate. I have seen women who were interested in the life, who had had no infectious disease, and who wanted to stay; but who were unable to do so on account of the influence of climatic conditions on them. Many of them had menstrual disturbances. As woman is the foundation of the home, I can entertain no great hope of the colonization of the tropics by the white race.

DR. HENRY R. CARTER, Baltimore: The white man who does not drink, who contracts no infectious disease and who takes sufficient exercise, will do well in the tropics. Babies, as a rule, do better in Panama than in the United States; but from the age of 3 or 4 years to 14 or 15 years children do not have enough exercise. They become too fat, have a pasty complexion and do not do well. It is a question in my mind whether under ordinary living conditions, white people will keep well in the tropics.

DR. C. S. LUDLOW, Washington: American women in the Philippine Islands commonly lose interest in the things that they are interested in at home. They do not take sufficient exercise to keep them well.

Taenia Saginata with V-Shaped Proglottides

DR. GEORGE DOCK, St. Louis: The patient was a negro woman who was treated for tapeworm in the dispensary. The greater part of the worm was removed, but the head was not obtained. Two other attempts were made to get the head, but both failed. In the three attempts 280 cm. of worm were obtained, consisting of 700 proglottides. These varied in width from 2 to 22 mm. Forty-five of the proglottides were asymmetric. The asymmetry resembled what would be obtained by putting two worms together at an angle. Each proglottis contained one genital pore usually

situated on the stem of the Y or at the apex of the V. Twenty-one cases have been reported in the literature. In a few cases the heads have been found; but in the majority of cases the heads have not been found. In cases in which the heads have been found, there have been six suckers. These worms are usually considered to be double monsters in which two suckers have fused. Histologic examination seems to throw no light on the details of the monstrosity.

Case of Trypanosomiasis

DR. J. A. CHATARD and DR. C. G. GUTHRIE, Baltimore: The patient was a man, aged 37, a native of Belgium. At the age of 22 he went to the Congo where he served twelve years. While there he had two severe attacks of amebiasis, one severe attack of blackwater fever and malaria constantly. On one occasion after a battle between eight Europeans and several hundred natives in which the mortality of the natives was high, so that their bodies remained unburied for several days, he had an obscure exanthematous disease, which many of the natives also had. This attack was characterized by high fever for four days, followed by a period of apyrexia; this was followed by the appearance of a papular eruption on an erythematous base, which was accompanied by a high fever and delirium. As he had been vaccinated he did not think it was small-pox. For eleven years he was located in the forest where sleeping-sickness was unknown, but later he was located in a sleeping-sickness country. There he had a febrile attack, which was followed by cervical lymphadenitis, depression, dizziness, lassitude, fever without chills, and increased appetite.

Aspiration of one of the cervical lymph-nodes revealed living trypanosomes. He was treated with atoxyl intramuscularly and tartar emetic intravenously. In nine weeks his symptoms disappeared. He was sent home to Antwerp and during the voyage the treatment was continued. When he reached Brussels the trypanosomes were absent. Although he was told that he must continue the treatment indefinitely he discontinued it at the end of the month because he had no symptoms. He came to the United States in 1909. In 1910 he had an attack of fever which was cured by quinin. In July, 1912, he became drowsy and his cervical lymph-nodes again enlarged and his other symptoms returned. He was very emotional and had some ataxia. The spleen was enlarged and hard and there was general enlargement of the superficial lymph-nodes. His blood showed a secondary anemia; there was a leukocyte count of 1,400; polymorphonuclear neutrophils, 40 per cent.; small mononuclears 54 per cent. Examination of the fresh blood was negative for parasites. Concentration methods were negative for trypanosomes. Aspiration of one of the enlarged cervical lymph-nodes showed no motile trypanosomes. Then one of the enlarged cervical lymph-nodes was removed and implanted into six rats. All six rats developed trypanosomes. Inoculation of rats with the patient's blood and the sediment of the cerebrospinal fluid failed to produce trypanosomes in the inoculated animals. After the intravenous injection of salvarsan the symptoms disappeared. The patient had a relapse two months later. He has been lost sight of.

DISCUSSION

DR. JOHN M. SWAN, Rochester, N. Y.: It seems likely that the beginning of the infection in this patient may be detected in the attack of fever followed by the papular eruption which occurred just after the battle between the Europeans and the natives. This exanthem would correspond pretty closely to the eruption described as being one of the early manifestations of trypanosomiasis.

DR. EDWARD R. STITT, Washington: It is well known that perfectly well people can have trypanosomes in their peripheral blood without showing evidences of infection.

The Species of Anophelines Concerned in the Transmission of Human Malaria

DR. FREDERICK KNAB, Washington, D. C.: The habits of all anophelines are not alike. The study of malaria will be advanced by the study of the habits of these mosquitoes, and such a study ought to help to solve the remaining problems in the natural history of malaria. There are thirty-four species of Anopheles mosquitoes in the United States, of which eight are known to transmit malaria. Other species may be proved in the future to be potential hosts of the malarial parasites. The appetite for blood varies very much in the different species of anophelines and efficient hosts may be found among those mosquitoes having such an appetite. The association of certain species with men, the longevity of the species, and the topographic conditions of the country are also factors in the solving of the malarial problems. No phase of the life-cycle of the mosquito should be neglected in the study of the disease; it is just as important to study the larva and the pupa as it is to study the imago.

DISCUSSION

DR. CREIGHTON WELLMAN, New Orleans: A study of the lists of mosquitoes which have been published as being indigenous to New Orleans makes one suspect that a great deal of careless determination of species has occurred. The careful determination of species and the locality in which they occur cannot be too particularly insisted on.

DR. MALCOLM WATSON, Klang, Federated Malay States: It is quite important to determine the species of Anopheles mosquitoes found in certain localities. It is useless to say that because Anopheles mosquitoes are present, therefore malaria must also be present. In the Federated Malay States the determination of species is absolutely essential if antimalarial measures are to be successful and economical. We cannot say from experience in one country what sanitary measures will be required in another.

DR. C. S. LUDLOW, Washington, D. C.: *Myzomyia ludlowi* is not thought to breed in fresh water, but the specimens from which the species was originally named were taken from fresh water. There is a species of malaria-carrying mosquito in the Philippine Islands which breeds in soap-suds water.

DR. H. R. CARTER, Baltimore: The determination of anophelines is frequently of importance in telling the sanitarian what he need not do. For instance, *Anopheles malefactor*, which breeds in collections of water, in hollow stumps on the Isthmus of Panama, is not a malaria carrier, and this knowledge is estimated to have saved the Canal Commission from $150,000 to $200,000 in its malarial work.

DR. EDWARD R. STITT, Washington, D. C.: At Canacao no malaria-carrying mosquito other than *Myzomyia ludlowi* is found. The highest salt content of the water at that place was 400 parts per million.

DR. ELMER F. OTIS, Peñuelas, Porto Rico: Malaria is restricted to the coast regions in Porto Rico, with one exception. In the hilly region in which malaria is present, the disease is brought from the coast by the natives who travel from the latter to the former.

Recent Observations on Malarial Plasmodia

DR. C. C. BASS, New Orleans: The development of malarial parasites in cultures is exactly similar to their development in the blood of man. There is no discoverable difference between the first generation and the fourth generation of parasites grown in culture mediums. If the tubes in which the parasites are growing are shaken, the parasites will be killed. Addition of blood-serum and polymorphonuclear leukocytes to the culture-medium will kill the parasites. When the parasites are liberated from the red blood-corpuscles most of them die and a great deal of débris is left behind. It is probable that not more than two parasites can develop in one red cell. If the red cell is infected with more than two parasites, when the organisms have reached a certain size they cause the red blood-corpuscles to rupture and they are destroyed. The benign tertian parasite is irregular in outline and is elastic, so that a red corpuscle containing such an organism can pass through the smallest capillaries. The estivo-autumnal parasite, on the other hand, is not elastic and will not pass through the smallest capillaries. Consequently, when a red blood-corpuscle containing such parasites reaches the smallest

capillaries it is stopped in its journey by the narrowing produced in the lumen of the capillary by the projection of the nuclei of the endothelial cells. Fifty per cent. of the deaths from malaria are due to cerebral plugging. After the capillaries have been plugged quinin will not reach the parasites; but if the capillaries can be dilated with nitrites then the quinin in the blood-stream may reach the parasites and kill them. The facts concerning cerebral plugging with malarial parasites have been determined by the injection of pure cultures of parasites through the carotid arteries of small animals, which, after a varying time, have been killed and their brains sectioned.

Beriberi

DR. WESTON P. CHAMBERLAIN, Plattsburg Barracks, N. Y.: Beriberi and polyneuritis gallinarum are identical diseases. There is no doubt of the correctness of the theory of the production of beriberi by rice, at least in the Orient.

Researches on the Etiology of Beriberi

DR. CREIGHTON WELLMAN, New Orleans: In feeding rice to fowls, if the pericarp is removed, the fowls develop polyneuritis. Legislation has been enacted in various countries and in California establishing a rice standard which classifies rice as beriberi-producing rice and non-beriberi-producing rice. In the United States this legislation prohibits the sale of rice when coated with glucose and talc, so-called polished rice. Polyneuritis gallinarum has been produced experimentally with milled rice, both cooked and uncooked; corn grits, containing 8.5 per cent. proteid; white wheat flour; a mixed diet containing oxalic acid; cane-sugar; puffed rice; cream of wheat, containing 11.75 per cent. of protein; sago; white potato; sweet potato; macaroni, and corn-starch. Fowls have been fed with many times the amount of glucose and talc which could be taken by the animals when on a diet of polished rice, without producing polyneuritis, provided the animal received at the same time a mixed diet. Fowls and pigeons, which are equally good for experimental purposes, have been fed on a mixed diet with the addition of 2 gm. of glucose and 1 gm. of talc a day for fifty-three days without producing the disease. When polyneuritis is produced, it appears on an average in about sixteen days, and is not cured by protein.

DISCUSSION

DR. CHARLES F. CRAIG, Washington, D. C.: In countries in which rice is the staple article of diet, laws should be passed prohibiting the sale of milled rice. In the United States, on the other hand, such legislation is absurd. If laws are passed in this country against milled rice it will subject us to much ridicule.

DR. WILLIAM S. KRAUSS, Memphis, Tenn.: In Memphis, during one of the Mississippi river floods, two boys were marooned on a levee for several days and had nothing to eat but beans. Both of these boys had paralysis of both legs as a result of this diet.

An Epidemiologic Study of Pellagra

DR. J. F. SILER and DR. P. E. GARRISON, New York: Spartanburg County, South Carolina, was selected on account of railway conveniences and because an excellent county map was in existence. From June 1 to Oct. 15, 1912, 282 cases of pellagra were reported. The morbidity in 1912 was between 35 and 45 per ten thousand population. In the ten townships of the county the existence of pellagra was greatest in Spartanburg and the surrounding townships. In every township pellagra is in excess in the cotton mill villages. In the city of Spartanburg the rate was slightly in excess of that in the mill villages. In the county of Spartanburg the cases among the white population exceeded those in the negro population in proportion of two to one. The morbidity of the disease among the whites was 45 per 10,000, and among the negroes 9.5 per 10,000. The density of the population alone does not offer an explanation for the incidence of the disease. The excess of the disease in the mill-village population is in the women and children who remain at home during the day. The incidence in the adult females is high. Pellagra appeared in Spartanburg in 1908 and increased progressively until 1911. There has been no recrudescence in the spring and in the fall. Climatic conditions influence the appearance of the symptoms. The majority of the cases occurred among the poorer families. In the families in which cases of pellagra occurred the absence of properly constructed privies, the absence of effective screening against flies, the limited use of fresh meat and the unhygienic preparations of food were noted. The importance of corn products seems to be less than was originally supposed.

Is the Importance of Intestinal Parasites in Tropical Pathology Exaggerated?

DR. EDWARD R. STITT, Washington, D. C.: Some writers take the ground that intestinal parasites are of no importance. On the other hand, the reduction in the death-rate in Bilibid Prison, from 75 per thousand to 9 per thousand after the quarantining of persons harboring intestinal parasites seems to indicate that there is some importance to be attached to their presence.

DISCUSSION

DR. CREIGHTON WELLMAN, New Orleans: Many men working in the tropics underestimate the importance of intestinal parasites, and some probably overestimate their importance. The idea that they amount to nothing is wrong. It would first seem necessary to define what is meant by the question, whether it applies to metazoan parasites alone or whether it includes protozoa as well as metazoa. Some years ago I investigated a disease which occurred among the fishermen of Western Africa. This disease was characterized by a severe anemia and was attended with a high mortality. It was found to be due to *Dibothriocephalus latus*. In one district in West Africa 13 per cent. of the population was incapacitated by uncinariasis. The activities of the Rockefeller Commission have been highly beneficial in relation to uncinariasis. In highly malarious countries the presence of intestinal parasites affects the mortality in two ways. The presence of hookworm infection increases the mortality from malaria; but, on the other hand, overzealous treatment of hookworm disease increases the mortality from malaria. Amebiasis is an important factor in the morbidity and mortality in the tropics. On the other hand, some parasites have been taken too seriously, such as *Strongylus subtilis*, *Hymenolepis nana* and *Trichuris trichiura*. It is possible that heavy infection with these parasites produce some anemia. In some districts in the tropics 100 per cent. of the children suffer from ascaris infection. This worm produces convulsions and even stimulates recrudescences of malaria. It is a difficult question to answer categorically; but I believe the importance of intestinal parasites is not exaggerated. Neglect of routine examination for intestinal parasites is reprehensible.

DR. HENRY J. NICHOLS, Washington: The importance of helminths is exaggerated. It is easy to discover an infection with intestinal worms; it requires no skill or special knowledge. These parasites have not the serious influence that other parasites have because they cannot reproduce themselves in the intestines. Intestinal worms are limited in their capacity for pathogenicity. As a general rule, it may be said that intestinal parasites are injurious in inverse proportion to their size and that intestinal worms are of the least importance. The helminthologists have justified the importance of these parasites, but their bearing on clinical medicine is not apparent. In the tropics a man is likely to suffer from infection with four or five parasites, and the relative importance of these infections must be decided by the clinician. He should be able to recognize the various worms and their possibilities for harm to the organisms. In some instances endeavors have been made to convince well persons who have been discovered to harbor intestinal parasites that they are sick. Of course the intestinal parasite has been used as a text for agitation in order to interest the public and legislators in the necessity for public health measures. For this purpose it is perhaps necessary to exaggerate the importance of the parasites. On the other hand, it is not necessary for medical men to accept this exaggeration.

DR. CHARLES F. CRAIG, Washington, D. C.: It is exceedingly difficult to give a categorical answer to the question of the importance of intestinal parasites. The conditions vary in different localities. In Porto Rico, for example, the importance of the hookworm is not exaggerated. The only intestinal worm of great importance in tropical pathology is the hookworm. *Schistosomum* is important but its locale is limited and the number of cases is small. The whipworm and strongyloides are of no importance whatever. Cochin China diarrhea is not due to strongylus infection. Ascaris is of no importance. In the Philippine Islands hookworm infection is light and has little to do with the sickness of the natives. We might say that in Porto Rico one has hookworm disease; but that in the Philippine Islands one has only hookworm infection. In the southern part of the United States the importance of the hookworm is exaggerated. The great stress laid on the influence of intestinal parasites takes no account of other infections, like malaria, which have more influence on the morbidity than uncinariasis. The hookworm campaign has improved the health of the people in districts in which there is no malaria, but there is a question whether or not anything has been accomplished in districts in which malaria is present. Leaving amebiasis and other protozoa out of the question, I am inclined to believe that the importance of intestinal parasites in tropical pathology is exaggerated.

DR. EDWARD R. STITT, Washington, D. C.: In cases of hookworm disease, finding the ova in the feces frequently puts the clinician off the track. When the eggs of this parasite have been found in the stool, the clinician is prone to think that the cause of the disease has been discovered, and it takes a long time to get over the idea. I have noticed that in the southern part of the United States men interested in tuberculosis take the tuberculosis attitude rather than the hookworm attitude, while, on the other hand, men interested in hookworm take the hookworm attitude to the exclusion of tuberculosis or other infection.

DR. PHILIP E. GARRISON, New York: The importance of intestinal parasites in tropical pathology is exaggerated. The subject has not been sufficiently studied from the point of view of relative importance, and it is time that an attempt was made to determine the position that the various parasites occupy in their power for producing disease. It is sometimes remarkable how a bacteriologist, for example, will go into a new field, use his own methods and expect the same results. A bacteriologist cannot see the reason for investigating intestinal worms, which are common, while he can see the use of investigating rabies, which is very rare. Intestinal worms are of importance in public health work, although we do not know just what their importance is. For a discriminating view further study of the subject should be encouraged. The relative importance of malaria and uncinariasis in the South should receive careful study. A hookworm carrier is as potential for the spread of hookworm disease as a typhoid carrier is for typhoid fever. The movement to make the hookworm campaign world-wide is thoroughly scientific. In the discussion of the entire subject we must be careful not to confuse the zoologic side with the public health and preventive-medicine side of the subject. I strongly urge that further discriminating emphasis be placed on the subject so that a proper conception of its true significance may be obtained.

DR. JOHN M. SWAN, Rochester, N. Y.: I recall two cases of chronic arthritis in which I thought that intestinal parasites were responsible for the joint conditions. One of these patients was a boy aged 10, a resident of Florida, who had a low-grade multiple arthritis of the finger-joints. On examination, the feces were found to contain hookworm ova. The removal of the intestinal parasites improved the joint condition but did not cure it. In another patient who had spent considerable time in the Far East, an examination of the feces showed numerous ascaris eggs. I told the patient that intestinal parasites were probably responsible for the arthritis; but was much chagrined to find only one unimpregnated female in the intestine. The removal of this parasite did not benefit the joint condition. We must not be too sure, however, that infection with similar harmless parasites is not productive of serious disease. Some years ago a paper on trichocephaliasis appeared in the *Philippine Journal of Science* in which a case was recorded of plugging at one of the coronary arteries by an adult trichuris. It has occurred to me that a good many obscure disturbances of health are brought about by the presence of intestinal worms, when the parasites first gain entrance to the intestinal tract; but it is likely that after they have been present for a varying period, a certain amount of immunity is developed by the host. I have often thought that the development of this immunity influenced the eosinophilia.

DR. BRAYTON H. RANSOM, Washington, D. C.: From the point of view of the helminthologist the question should read: Is the importance of intestinal parasites overestimated? The answer to this question depends much on local conditions. We are less informed regarding the importance of intestinal worms in animals than we are of their importance in man. At present it is impossible to say that any intestinal parasite is of paramount importance in relation to animal disease.

DR. WESTON P. CHAMBERLAIN, Plattsburg Barracks, N. Y.: A question such as that propounded for this discussion cannot be answered categorically. Some authors have exaggerated the importance of intestinal parasites and some have underestimated their importance. As a whole, it is probable that their importance has not been exaggerated. The subject needs further careful attention until the relative values of the different infections are understood. There is a great deal of difference between light and severe hookworm infection. The importance of these infections in the Philippine Islands is apparently not great. As I have reported elsewhere the polymorphonuclear leukocytes are reduced in the blood of white men residing in the Philippine Islands. The Arneth formula is the same in white men in the Philippine Islands as in the United States. In the native, on the other hand, there is a distinct shift to the left in the Arneth formula. This seems to be due to the lowering of the resisting power of the individual. The cause, however, is unknown; but it is worthy of further research.

DR. ELMER F. OTIS, Peñuelas, Porto Rico: In Porto Rico it does appear that infections with intestinal parasites produce a physical, vital and nervous effect that classifies children, particularly, as deficient. Other intestinal parasites appear to produce a toxemia.

The Cultivation of Filaria Embryos in Vitro

DR. CREIGHTON WELLMAN, New Orleans: By using various mediums, such as dog serum and dextrose, human serum, artificial serum, ascitic fluid and salt solution with carbohydrates it has been found possible to cultivate the embryos of *Filaria immitis* and *Cetaria labiata papillosa*. The development of the embryos in the artificial mediums has gone on so that the alimentary canal has been differentiated, and in some cases the spicules of the male have been seen.

Free-Living and Parasitic Amebas and Their Relation to Dysentery

DR. EUGENE R. WHITMORE, U. S. Army: As a result of the study of various cultures of parasitic and free-living amebas, the conclusion has been reached that *Entamoeba histolytica*, *Entamoeba tetragena* and *Entamoeba minuta* are identical. The nucleus of a typical *Entamoeba histolytica* is a senile nucleus of *Entamoeba tetragena*. Spore formation in amebas is due to the extrusion of chromatin granules into the cytoplasm in the old age of the cell. Cultural amebas are not identical with pathogenic amebas and have nothing to do with dysentery. The exposure of the Petri dishes to the air in India will result in the growth of numerous amebas. There are two well-defined species of amebas, *Entamoeba coli* and *Entamoeba histolytica*.

DISCUSSION

DR. CHARLES F. CRAIG, Washington, D. C.: I am convinced that *Entamoeba histolytica* and *Entamoeba tetragena* are identical.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DELAWARE: State Society and Homeopathic, Dover and Wilmington, June 17-19. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

ILLINOIS: Coliseum Annex, Chicago, June 17-19. Acting Sec., Mr. Amos Sawyer, Springfield.

KANSAS: Topeka, June 10. Sec., Dr. H. A. Dykes, Lebanon.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, June 17. Sec., Dr. J. McP. Scott, Hagerstown; Homeopathic, Baltimore, June 13-14. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave.

MICHIGAN: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSOURI: Gymnasium of St. Louis University, St. Louis, June 16-18. Sec., Dr. J. A. B. Adcock, Jefferson City.

MONTANA: Senate Chamber, Capitol Bldg., Helena, July 8. (First special examination held aside from regular semi-annual examinations.) Sec., Dr. William C. Riddell, Helena.

NEW JERSEY: Capitol Bldg., Trenton, June 17-18. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW YORK: June 24-27. Chief of the Examinations Division, Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Morehead City, June 12. Sec., Dr. Benjamin K. Hays, Oxford.

PENNSYLVANIA: Harrisburg, Philadelphia and Pittsburgh, June 23-25. Sec., Mr. Nathan C. Schaeffer, Department of Public Instruction, Harrisburg.

SOUTH CAROLINA: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St.

TEXAS: Capitol Bldg., Austin, June 24-26. Sec., Dr. W. L. Crosthwait, Suite 1110 Amicable Bldg., Waco.

VIRGINIA: Richmond, June 24-27. Sec., Dr. Herbert Old, Norfolk.

WISCONSIN: Milwaukee, June 24-26. Sec., Dr. J. M. Beffel, 3200 Clybourn Street.

WYOMING: State House, Cheyenne, June 25-27. Sec., Dr. J. B. Tyrrell, Laramie.

California April Report

Dr. Charles B. Pinkham, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, April 1-4, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 106, of whom 76 passed, including 12 osteopaths, and 30 failed, including 12 osteopaths. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of California	(1902) 93.6, (1907) 80.2,	84,
Coll. of Physicians and Surgeons, San Francisco	(1909)	87.1
Cooper Medical College	(1912) 75, 81.6,	89.9
Hahnemann Medical College of the Pacific	(1912)	75.6
Gross Medical College	(1893)	91.1
Denver College of Medicine	(1888)	83.6
Denver and Gross College of Medicine	(1910)	88.5
University of Colorado	(1909) 80.8; (1910)	82.8
Northwestern University Medical School, (1908) 85.7; (1911) 79, 84.4, 86.8.	(1894) 84.7; (1905)	88.3
Northwestern University Woman's Medical School, (1899) 81.4.	(1897)	88.1;
Hahnemann Medical College and Hospital, Chicago	(1912)	81.2
Chicago College of Medicine and Surgery	(1912)	84
Rush Medical College, (1911) 88.1; (1912) 80.9.	(1893) 91.8; (1899) 86.9; (1902)	91;
College of Physicians and Surgeons, Chicago, 84.8; (1902) 80.8; (1906) 77.5; (1907) 90.3; (1912)	(1896) 82.8; (1900)	75.
Bennett Medical College, Chicago	(1900)	85.1
State University of Iowa, College of Medicine	(1908)	86.4
Hospital College of Medicine, Louisville	(1901)	85.8
University of Maryland	(1909)	81.6
Johns Hopkins University Medical School, 93.3.	(1909) 93.7; (1910)	
Baltimore University School of Medicine	(1899)	80.5
University of Michigan, Dept. of Med. and Surg.	(1912)	88.4
Detroit College of Medicine	(1893)	94.8
Univ. of Minnesota, School of Med.	(1901) 82; (1911)	89.9
Univ. of Minnesota, Homeopathic College	(1895)	81.6
University Medical College, Kansas City	(1899)	80.4
Central Medical College, St. Joseph	(1898)	82.5
Creighton Medical College	(1911)	77
Lincoln Medical College	(1906)	77.2
Bellevue Hospital Medical College	(1897)	90.9
Cornell Univ. Medical College	(1907) 81.1; (1911)	83.5
Syracuse University	(1912)	84.5
Columbia University	(1910)	90.5
Long Island College Hospital	(1911)	82.3
Cleveland Homeopathic Medical College	(1904)	78.9
Willamette University	(1904)	81.6
Jefferson Medical College, (1888) 86.7; (1907) 95.1; (1908)		89.6
University of Pennsylvania	(1904)	77
University of Montpellier, France	(1910)	78.3
University of Edinburgh, Scotland	(1906)	85.3
FAILED		
Hahnemann Medical College of the Pacific	(1912)	72.5
College of Physicians and Surgeons, San Francisco, 67.3; (1912) 70.6.	(1911)	15.1;
Denver and Gross College of Medicine	(1906)	73.1
College of Physicians and Surgeons, Chicago	(1912)	70.2
Medical College of Indiana	(1904)	62.6
Hospital College of Medicine, Louisville	(1896)	74.3
University of Maryland	(1883)	79.5*
Medical School of Maine	(1896)	61.3
Missouri Medical College	(1886)	70.1
Barnes University	(1908)	67.6
Omaha Medical College	(1895)	74.3
Laura Memorial Woman's Medical College	(1903)	60.9
Eclectic Medical College, Cincinnati	(1903)	69.5
University of Pittsburgh	(1911)	70.9
University of Nashville	(1902)	79.2*
Tennessee Medical College	(1908)	63.8

* Fell below the required average in certain subjects.

The following questions were asked:

PATHOLOGY

Answer ten questions only: 1. Describe the difference between infiltration and atrophy. 2. Describe the difference between simple atrophy and brown or pigmentary atrophy. 3. What changes are likely to take place in the musculature of the heart as the result of debilitating or lingering disease? 4. Describe the changes in the heart muscle from *(a)* partial coronary obstruction, *(b)* complete coronary obstruction. 5. What pathologic condition causes hemoglobinuria? 6. Describe the difference you would expect to find between the pathologic finding in nephritis caused by acute infection and nephritis caused by arteriosclerosis. 7. Describe the pathologic changes resulting from destructive disease of the adrenals. 8. Describe the difference in the pathologic changes which take place in the lung in acute bronchitis from those which occur in bronchopneumonia. 9. Describe the condition you would expect to find in the lung after death from acute pulmonary edema. 10. What pathologic changes in various parts of the body result from destructive disease of the pancreas? 11. How do the structural changes found in the thyroid in exophthalmic goiter differ from the changes which occur in the simple or more benign forms of goiter? 12. Describe the pathologic findings in the brain after death resulting from senile dementia.

ANATOMY

Answer ten questions only: 1. Describe the greater omentum. 2. *(a)* Name the important structures in relation with the inferior thyroid artery. *(b)* Give the branches of the inferior thyroid artery. 3. *(a)* Name the vessels and nerves of the pericardium. *(b)* Describe the serous pericardium. 4. What are the main channels for carrying on the circulation when the common femoral artery is tied? 5. Describe the deep palmar fascia. 6. Describe the forms of joints and give one example of each. 7. Describe the arrangement of the bones of the foot. 8. Locate the following structures with reference to the anterior abdominal wall: *(a)* jejunum; *(b)* ileum; *(c)* hepatic flexure; *(d)* cecum; *(e)* sigmoid flexure. 9. Describe the azygos veins. 10. Describe the suprarenal glands. 11. *(a)* Name the muscles of the posterior humeral region; *(b)* the anterior radio-ulnar region. 12. Give the surface markings of the heart and locate the valves with reference to anterior chest wall.

HISTOLOGY

Answer ten questions only: 1. What microscopic features would enable you to distinguish a section of the cornea from one of the epiglottis, both made perpendicularly to the surface? 2. Name the varieties of cartilage, a location where each is found and describe in detail one each. Make a drawing. 3. Describe the several varieties of white blood-corpuscles found in the human blood. Make drawings. 4. What microscopic features would enable you to distinguish a section through lung tissues from one through omental tissue? Make drawings or diagrams. 5. How would a section from the cortex of the kidney differ microscopically from one from the pancreas? 6. What microscopic characteristics would enable you to distinguish between a longitudinal section through voluntary-muscle tissue and a transverse section through dried bone? Make drawings or diagrams. 7. Describe the most prominent microscopic feature of a section of the scalp made perpendicularly to the surface. Make drawing or diagram. 8. Compare a section from the sublingual gland with one through a sebaceous gland, describing the microscopic features. 9. Compare the microscopic structure of the uterine mucous membrane with the mucous membrane of the cardiac end of the stomach. Illustrate differences with drawings. 10. Describe a nerve fiber such as is found in a peripheral nerve distributed to a voluntary muscle, and compare it with one distributed to an involuntary muscle. 11. Describe all the bile passages *in* the liver. 12. Describe a cell found only in the *(a)* cerebellum; *(b)* cerebrum; *(c)* spinal ganglia. *(d)* Name a structure found only in the thymus gland, and *(e)* ovary.

BACTERIOLOGY

Answer ten questions only: 1. Discuss, not over one page, *Bacillus diphtheriæ*. 2. Define ptomain, leukomain, symbiosis, complement, hemolysis. 3. From whence and how is small-pox vaccine obtained? 4. How would you confirm a diagnosis of typhoid fever? Give detail. 5. How do malarial parasites enter the blood? Give exact detail. 6. How does the *Taenia solium* propagate? 7. How would you distinguish between *Filaria americana* and *Trichocephalus dispar*? 8. Name five bacilli which are the cause of acute infectious diseases. 9. What rôle do amboceptors play in the destruction of bacteria in the body? 10. How would you vaccinate an individual against typhoid fever? 11. Draw a picture of a trypanosome. What disease do they cause in man? How does the infection take place? 12. Name five pathogenic germs which are motile.

CHEMISTRY AND TOXICOLOGY

Answer ten questions only: 1. *(a)* What are amalgams? *(b)* What are indicators? *(c)* What are alexins? *(d)* What are ptomains? 2. Give the formula of each of the following: *(a)* hydrogen peroxid; *(b)* calomel; *(c)* hydrocyanic acid; *(d)* arsenious acid; *(e)* benzene. 3. How can nitrous oxid be distinguished from oxygen? 4. What keeps casein in solution in milk? What effect does carbon

dioxid have on casein? 5. Discuss the constituents of urinary calculi. 6. Describe in detail three methods for determining the presence of glucose in a mixture. 7. Mention at least ten ways by which a poison is influenced. 8. Explain how a mixture of borax and milk is a good general antidote. 9. Why should alcohol never be given when tannin in any form is used as an antidote? 10. How would you detect the presence of salicylic acid in food? 11. What poison would you suspect had caused death, if the odors became more marked on opening the body? 12. Under what conditions may fatal poisoning be caused by tomatoes and potatoes?

OBSTETRICS

Answer ten questions only: 1. Describe proper methods of administering an anesthetic during labor, with indications for its use. 2. Discuss the matter of spinal anesthesia during labor. 3. Describe the proper procedure in threatened mammary inflammation. When abscess follows, what is the usual source of infection? 4. Give etiology of and description of puerperal psychosis. 5. How does primary and secondary abdominal pregnancy differ? Which is most common? 6. In diagnosis of transverse position, shoulder presenting (D. L. A.) where would the (*a*) head be found? (*b*) the breech? (*c*) the back? 7. How would you proceed to convert a presenting shoulder into a vertex position? 8. Describe case of decidual endometritis, giving its influence on pregnancy. 9. Give the conjugate diameter of the pelvis below which you would consider the induction of premature labor advisable. 10. Give the more common successful methods of dilation of the cervix during labor. 11. Give the names of the bones and articulations of the obstetric pelvis, describing what constitutes the true and false pelvis. 12. Discuss matter of intra-uterine irrigation following complete abortion.

GENERAL DIAGNOSIS

Answer ten questions only: 1. Differentiate auricular fibrillation from heart-block. 2. Give the symptoms and physical findings in prostatic hypertrophy. 3. Differentiate acromegaly from myxedema. 4. Give a clinical description of erysipelas. 5. A patient, otherwise in good condition, who has been operated on a few days previous for varicose veins of the thigh, suddenly develops dyspnea, diaphoresis, unconsciousness and death. What is the probable diagnosis? 6. Differentiate cerebral hemorrhage from the syncope of acute alcoholism. 7. Describe the sequence of symptoms and signs in tuberculosis of the hip-joint. 8. Name five acute infectious diseases characterized by a skin eruption, and give the time it occurs in relation to initial symptoms and the appearance of the eruption in each. 9. Give the diagnostic, chemical and microscopic findings in the urine in a case of chronic parenchymatous nephritis (large white kidney). 10. Describe a case of chlorosis. 11. Give the symptoms and physical findings in acute pericarditis. 12. Name the clinical varieties of liver hypertrophy and give the diagnostic points in abscess of this organ.

GYNECOLOGY

Answer ten questions only: 1. Describe the structures composing the pelvic floor. 2. What are the anatomic conditions which may lead to retroversion of the uterus? 3. Name and describe the ligaments of the uterus. 4. In what portion of the genito-urinary tract is cystocele most likely to occur and what conditions predispose thereto? 5. Give the diagnosis of cervical carcinoma, (*a*) clinical, (*b*) microscopic. 6. Differentiate a right salpingitis from appendicitis. 7. Give the clinical and physical findings in a ruptured ectopic gestation. 8. Name the conditions which may cause metrorrhagia. 9. A patient states that she has not menstruated for six weeks; differentiate two conditions that might be causing the amenorrhea. 10. Name the instruments required and the positions in which the patient may be placed for a thorough gynecologic examination. 11. Differentiate a strangulated femoral hernia from inguinal lymphadenitis. 12. Give a diagnosis in detail of gonorrheal infection of the female genito-urinary tract not including the kidney.

PHYSIOLOGY

Answer ten questions only: 1. Give evidence of tonic activity of the spinal cord. 2. What phenomena occur following section of a lateral half of the spinal cord? 3. Why are the muscles of respiration not affected in hemiplegia? 4. Describe the natural defect of the eye known as astigmatism. 5. What is the approximate time required for a complete circulation of the blood? 6. Discuss the automatic action of the heart. 7. Discuss the regulation of the circulation in the brain. 8. To what structures are (*a*) vasoconstrictor nerves, (*b*) vasodilator nerves distributed? 9. Is the exchange of gases in the lungs entirely explained by the laws of diffusion? Give reason for your answer. 10. Describe intestinal peristalsis. 11. What is the digestive action of saliva? 12. What is the composition of sweat and to what extent may it be compensatory for lack of activity of the kidneys?

HYGIENE

Answer ten questions only: 1. What causes tetanus? Under what conditions is tetanus most likely to develop? What would you do to prevent the development of tetanus in an individual case? 2. Name diseases that may be carried by water. 3. What classes of patients should avoid living in altitudes of over 5,000 feet? 4. What is the most common cause of blindness in infants? How would you combat it? 5. Name three diseases that are spread by the improper disposal of human excreta. How does each of these diseases get into the human body? How should excreta be disposed of in order to eliminate these diseases? 6. Who first discovered and announced the value of vaccination for the prevention of small-pox? What observation of his led to this discovery? Give approximate date of his discovery. 7. How is diphtheria disseminated; how does it enter the system and what should a municipality do to eliminate it? 8. Name three diseases that are spread by flies. What methods should be used to prevent and kill flies? 9. What other insects besides flies carry diseases to human beings? What variety of mosquito carries yellow fever; What variety of mosquito carries malarial fever? What should be done to rid a community of the mosquito? 10. What sanitary measures should be adopted in the care of a typhoid patient? 11. What is the difference between asepsis and antisepsis? Who first announced a system of antiseptic surgery? Approximate date of his birth and death. 12. What should be done to prevent spread of venereal diseases in a municipality? In the army and navy?

Illinois January Report

Mr. Amos Sawyer, acting secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Jan. 22-24, 1913. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of physicians examined was 106, of whom 57 passed and 43 failed. Six candidates did not complete the examination. Of "other practitioners" 49 were examined, of whom 15 passed, 33 failed and one withdrew. There were also 42 midwives examined, of whom 26 passed and 16 failed. For the physicians examined, the following colleges were represented:

PASSED

College	Year Grad.			Total No. Examined
George Washington University	(1906,1)	(1910,2)		3
Northwestern University Medical School	(1910,1)	(1911,1)	(1912,3)	5
Rush Medical College			(1912)	4
University of Illinois	(1911,3)		(1912,6)	9
Bennett Medical College	(1911,2)	(1912,7)	(1913,4)	13
Chicago College of Medicine and Surgery	(1911,2)	(1912,5)	(1913,2)	9
Hahnemann Med. College and Hospital, Chicago			(1912)	1
Illinois Medical College			(1910)	1
Reliance Medical College			(1911)	2
State University of Iowa, College of Medicine			(1908)	1
Harvard Medical School			(1910)	1
University of Michigan, Dept. of Med. and Surg.			(1910)	1
Barnes Medical College			(1898)	1
Albany Medical College			(1909)	1
New York University Medical College			(1905)	1
Syracuse University			(1909)	1
Jefferson Medical College			(1912)	1
Baylor University			(1910)	1
Milwaukee Medical College			(1910)	1

FAILED

College	Year Grad.			Total No. Examined
Hahnemann Medical College and Hospital, Chicago	(1910,1)	(1911,1)	(1912,1)	3
Bennett Medical College	(1911,1)		(1912,5)	6
American College of Medicine and Surgery, Chicago			(1905)	1
Chicago College of Medicine and Surgery	(1911,2)		(1912,5)	7
Hering Medical College			(1912)	1
Illinois Medical College			(1910)	1
Jenner Medical College	(1910,1)		(1912,2)	3
National Medical University	(1903,1)		(1909,2)	3
Reliance Medical College			(1911)	2
University of Illinois			(1912)	5
Hospital College of Medicine, Louisville			(1904)	1
Barnes Medical College	(1898,1)		(1905,1)	(1910,1) 3
St. Louis College of Physicians and Surgeons			(1910)	1
Meharry Medical College	(1904,1)		(1910,1)	(1912,2) 4
Medical College of Virginia			(1877)	1
University of Naples, Italy			(1907)	1

Georgia Homeopathic May Report

Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners of Georgia, reports that at the meeting held at Atlanta, May 8, 1913, three candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Maryland Medical College	(1905)	Maryland
New York Homeopathic Medical College and Hospital	(1884)	New York
Cleveland Homeopathic Medical College	(1901)	Michigan

Nevada May Report

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 5-7, 1913. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Seventeen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore	(1883)	75.2
Columbia University, College of Phys. and Surg.	(1907)	90.8
Ohio Medical University	(1904)	76.4

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Georgia College of Eclectic Med. and Surgery	(1912)	Georgia
Rush Medical College	(1904)	Illinois

Bennett Medical College	(1906)	Illinois
Indiana University	(1910.2)	Indiana
University of Kansas	(1907)	Missouri
University of Louisville	(1908)	Georgia
Maryland Medical College	(1911)	Penn.
Atlantic Medical College	(1909)	W. Virginia
University Medical College, Kansas City	(1904)	Kansas
St. Louis College of Physicians and Surgeons	(1895)	Iowa
Cleveland Homeopathic Medical College	(1904)	
Kentucky	(1905)	Penn.
Western Pennsylvania Medical College	(1901)	Penn.
University of the South	(1899)	Oklahoma
University of Vermont	(1911)	Vermont
Laval University, Montreal	(1898)	Minnesota

Book Notices

THE INTERPRETATION OF RADIUM. Being the Subject of Six Free Popular Experimental Lectures Delivered at the University of Glasgow. By Frederick Soddy, M.A., F.R.S., Independent Lecturer in Physical Chemistry and Radio-Activity in the University of Glasgow. Third Edition. Cloth. Price, $2. Pp. 284, with 32 illustrations. New York: G. Putnam's Sons, 1912.

The great generalizations of science and their interpretation are among the finest exercises of the human mind. It would be rash to speak of any one of them as the most fascinating. Newton's law of gravitation, Joule's law of the conservation of energy, Dalton's atomic theory, all these in their application to the interpretation of physical phenomena offer exercises of the mind that are unsurpassable in their appeal to the imagination. The latest achievement of this sort is the interpretation of the phenomena of radio-activity, as manifested by a few chemical elements of which radium is the most notable. These phenomena have brought us face to face with new and absolutely unexpected facts; here are substances which have all the characteristics of chemical elements, but are the source of relatively enormous quantities of spontaneous energy —a new source of energy in our universe; a new fundamental fact in physics, of application so wide as to stagger the imagination. The interpretation of these phenomena has brought an equally startling shock to our chemical concepts. The atom has stood through all the development of modern chemistry as the final analysis of matter—the prototype of the unchangeable. In Clark Maxwell's famous words, quoted by Soddy, "None of the processes of Nature, since the time when Nature began, have produced the slightest difference in the properties of any molecule (atom)." And now we have the fact that the energy arising in radio-active substances is nothing less than the product of spontaneous disintegration of these selfsame atoms. We have a fact in physics that leaves us no longer in want of a satisfactory explanation of all of the energy that the astronomical universe manifests. It may not all be derived from this source, but this source might easily supply it. There may be more fascinating and far-reaching conceptions in science than those arising from the interpretation of radio-activity, but they are hard to imagine.

Soddy is one of the creators of this fascinating subject; to him with Rutherford is due the explanation of the origin of the energy of radio-activity elements in their spontaneous disintegration. In addition to his high scientific originality, he is one of those rare men, apparently the peculiar product of English genius, who have the capacity of putting great scientific facts into vivid popular form. This combination of qualities has produced in this book an engrossing narrative of science. When delivered in lecture form it must have carried his hearers back to the great popular lectures on physical science by Humphry Davy a hundred years ago. The work is commended to every one who has any scientific imagination.

OCCASIONAL PAPERS ON THE PREVENTION OF SOME COMMON DISEASES IN CHILDHOOD. By J. Sim Wallace, D.Sc., M.D., L.D.S., Dental Surgeon and Lecturer on Dental Surgery and Pathology, London Hospital. Cloth. Price, 3 shillings, 6 pence. Pp. 103. London: Baillière, Tindall & Cox, 1912.

Approving the reputed dictum of Osler that more physical deterioration is produced by defective teeth than by alcohol, Wallace in several chapters expresses some rather unusual ideas regarding certain common diseases of infancy and childhood. He emphasizes particularly the error in the accepted modes of feeding children on a soft or "slop" diet, with a resulting caries of the first set and imperfect development of the permanent set of teeth. He says that from 95 to 100 per cent. of children 6 years old or less have carious teeth, with resultant defective development and disease. He also says that 15 per cent. of children 14 years old also have defective teeth. His statistics may be correct so far as they apply to Great Britain; they are certainly exaggerated so far as the United States is concerned. He then proceeds to outline a physiologic diet to be taken in a physiologically arranged manner, so that the first set of teeth will be conserved and that the permanent set will be properly developed and not subject to caries. He lays emphasis on the necessity of giving food which gives exercise to the teeth and gums and at the same time has a cleansing effect, so that food particles may not be allowed to remain in the mouth. He also insists that the diet as arranged by him will not only prevent the overgrowth of pathogenic bacteria, but will also encourage saprophytes which are really beneficial. Wallace also expresses the belief, and gives figures to show, that adenoids occur most frequently in children who sleep in open, well-ventilated rooms rather than among those who sleep in closed rooms during damp and cold weather. Among the other subjects treated in this book are the prevention of tuberculosis, a further chapter on prevention of dental caries, and one on infant mortality and milk. The author has definite ideas on all these subjects, and one must give him credit for expressing them vigorously, whether one believes them or not.

DOC WILLIAMS. A Tale of the Middle West. By Charles H. Lerrigo. Cloth. Price, $1.25 net. Pp. 329. New York: Fleming H. Revell Company, 1913.

An uneducated old man of high principles, great knowledge of human nature and most lovable character practices medicine by virtue of the years of practice clause in a way which we would ordinarily call quackery, but which is highly satisfactory to a large following of people. He raises a foundling and sends him to medical school. The conflict in the young man's mind between scientific medicine on the one hand, and his loyalty and devotion to the old man in spite of his questionable methods on the other, form an interesting part of the book. We are glad to see this book before the people. Well written, with a love story and detective complications cleverly interwoven, it will bring to its readers some very pertinent truths concerning quackery and scientific medicine. The success of the lovable old man, in spite of his lack of training, comes out very clearly and the reader realizes the great power for benefit that there is in the patient's confidence in his attendant, even though the attendant lack modern methods. The importance of vital statistics, a national department of health, and serum therapy are made clear on the one hand, while on the other are brought out the value of common sense, natural living, old-fashioned philosophy and faith in God. The author, Dr. Lerrigo, is a member of the Kansas State Board of Health, and we congratulate him on his work.

CARDIOVASCULAR DISEASES. Recent Advances in Their Anatomy, Physiology, Pathology, Diagnosis and Treatment. By Thomas E. Satterthwaite, A.B., M.D., LL.D., Consulting Physician Postgraduate Hospital. Cloth. Price, $2 net. Pp. 166, with 80 illustrations. New York: Lemcke & Buechner, 1913.

This is a revision of twelve brief essays previously published in medical journals. Topics such as the arhythmias, malpositions of the heart, cardiovascular thromboses, myocardial disease and malignant endocarditis are discussed. There is also consideration of some of the newer discoveries relating to the anatomy and physiology of the heart, as well as of instruments used in studying the heart and vessels, the various sphygmomanometers, polygraphs, the electrocardiograph, etc. Much of what is said is excellent; much seems to have been gathered from reading rather than from actual laboratory or clinical experience. The book is not one to be consulted for complete and accurate knowledge concerning these topics, though it contains a great deal that is suggestive and of interest.

TRAVAUX DE CHIRURGIE ANATOMO-CLINIQUE. Par Henri Hartmann, Professeur à la Faculté de Médecine; Chirurgien de l'Hôpital Bichat. Avec la Collaboration de R. Cunéo et Paul Lecène, professeurs agrégés, chirurgiens des hôpitaux; Küss, prosecteur à la Faculté; Delamare, V. Henry et Lebreton, anciens internes des hôpitaux. Series 4: Voies Urinaires. Paper. Price, 16 francs. Pp. 472, with 132 illustrations. Paris: G. Steinheil, 2, Rue Casimir-Delavigne, 1913.

This volume is a review of 1,787 operations performed by Dr. Hartman on the organs of the urinary tract; 113 patients died. The deaths are detailed, giving the operation performed, the cause of death and usually the necropsy findings. Operative technic is minutely described, and indications and contra-indications for operation carefully reviewed. The term "periurethral adenomyoma" is suggested to displace the commonly used term "hypertrophy of the prostate." Perineal prostatectomy by a lateral incision is described and condemned as giving 50 per cent. of incontinence.

An operation for exstrophy of the bladder is described which consists in making an artificial bladder with a piece of intestine: one end of this intestinal segment is implanted between the rectal mucous membrane and the rectal sphincter, giving the individual control of the urine. The operation is done in two stages, and the result in two cases has been good. The patient is able to hold the urine two or three hours during the day, but during the night there is incontinence. In neither of these two cases has there been any sign of urinary infection. Among the 133 nephrectomies reported, the pleura was never injured. The only complications were opening of the peritoneal cavity and hemorrhage: the hemorrhage was due in one case to the tearing of the vena cava. In this series there were four deaths. This work is an excellent contribution to the surgery of the genito-urinary tract.

DISEASES OF THE HEART AND AORTA. By Arthur Douglass Hirschfelder, M.D., Associate in Medicine, Johns Hopkins University, with an Introductory Note by Lewellys F. Barker, M.D., LL.D., Professor of Medicine, Johns Hopkins University. Second Edition. Cloth. Price, $6. Pp. 738, with 334 illustrations. Philadelphia: J. B. Lippincott Company, 1913.

It is a pleasure to note that the favorable comment made by us in reviewing the first edition of Hirschfelder's work has been justified by its cordial reception, and a demand within a short space which has made necessary the publication of a second edition. It is with added pleasure that we find that this edition is more than a reprint of the first. Something like 100 pages have been added and there has been a sincere and successful effort to bring the subject up to date. There is much new material concerning the electrocardiagraph and its bearing on questions of cardiac physiology, pathology, symptomatology and the effects of drugs, notably digitalis. The subject of arteriosclerosis has been revised; consideration has been given to acapnia and kindred topics. New illustrations, many of them Hirschfelder's own, are added. There is a touch of originality about Hirschfelder's diagrams. While some may not be classed as artistic there are few that are not instructive, and many of them are truly ingenious. The book has an individuality of its own, is not made after the stock pattern and is to be most highly commended to the student seeking scientific knowledge concerning the heart and its diseases.

TABULAR DIAGNOSIS. An Aid to the Rapid Differential Diagnosis of Diseases. By Ralph Winnington Leftwich, M.D. Cloth. Price, $2.10 net. Pp. 359. New York: Longmans, Green and Company, 1913.

This is a very complete presentation of the contrasting differentiating symptoms of diseases. On each page two diseases are contrasted. In addition to the differentiating symptoms thus given, symptoms common to both are enumerated at the bottom of the page, with frequent references to similar diseases contrasted elsewhere in the volume, and explanations of new or imperfectly known signs which have been named. The tables include contrasting signs obtained by microscopic and other laboratory methods. The book is the most complete of any of the kind that has come to our notice and seems to be brought well up to date. A careful reading of many of the tables has not revealed errors.

THE INTERNATIONAL MEDICAL ANNUAL. A Year-Book of Treatment and Practitioners' Index. Thirty-First Year. Cloth. Price, $3.50. Pp. 628, with 152 illustrations. New York: E. B. Treat & Co., 1913.

An examination of this year-book shows a wealth of material well arranged and presented in a form for ready reference. The articles are alphabetically arranged but classified in different sections according to the general subject to which they relate. Much prominence is given to new remedies, and a large number of articles in connection with them are abstracted. While some allowance must be made for a certain neutral attitude of the abstracter or reporter, the impression is nevertheless gained that a more critical selection of the material should have been made. The article on digalen by Moore has received severe criticism by Hatcher, but no notice is taken of this criticism.

On the whole, the book is well made and the illustrations are excellent. It is presented in a single convenient volume.

MEDICAL LABORATORY METHODS AND TESTS. By Herbert French, M.A., M.D., F.R.C.P., Assistant Physician, Guy's Hospital. Third Edition. Cloth. Price, $1.50 net. Pp. 202, with 88 illustrations. Chicago Medical Book Company, 1912.

Since this manual has reached its third edition, it has evidently given good service to those who need an elementary guide in urinalysis and blood examinations. The ordinary processes of urinary examination are well described. Gastric analysis, on the other hand, appears to have been regarded as a sort of rare exercise which the doctor might try if the patient should happen to vomit. Incidentally the composition of test-meals is given and the use of the stomach tube recommended in cases requiring particular investigation. A similar limited view of examination of the feces appears to prevail in the author's neighborhood. Nevertheless the book is a handy volume which may supply the need of some diagnosticians.

MILK AND ITS PRODUCTS. A Treatise on the Nature and Qualities of Dairy Milk and the Manufacture of Butter and Cheese. By Henry H. Wing, Professor of Animal Husbandry in Cornell University. Cloth. Price, $1.50 net. Pp. 433, with 61 illustrations. New York: The Macmillan Company, 1913.

This book is intended primarily for the dairyman, and tells about the judging of cows and the production of milk, butter and other milk products, from the point of view of the dairyman. Interesting chapters are those on the bacteriology of milk, the production of certified milk, the manufacture of ice-cream and of the various cheeses, legal standards for dairy products, dairy laws, etc. Numerous references to reports and bulletins bearing on the production of milk are also given. The book is one of the rural science series of Cornell University, and in its revised and enlarged form, after many printings, is a standard book on dairy practice.

AIDS TO TROPICAL HYGIENE. By Major R. J. Blackham, D.P.H. (Lond.), R.A.M.C., Divisional Sanitary Officer, First Division, Indian Army. Cloth. Price, $1.25 net. Pp. 192. New York: William Wood & Co., 1912.

Major Blackham, for many years on duty in India, presents a vast amount of information regarding tropical hygiene. He takes up successively climate and meteorology; air and ventilation; water and water-supplies; food and feeding; clothing; sites, soils and houses; disposal of refuse; disposal of the dead; insects and disease; animal parasites; prevention of malaria, and disinfectants and disinfections. Appended are two valuable tables, one indicating the preventive measures in tropical diseases, and the other showing the distinctive characters, in the various stages, of the more important species of flies found in houses.

JAHRBUCH FÜR ORTHOPÄDISCHE CHIRURGIE. Von Dr. Paul Glaessner, orthopädischer Assistent der chirurgischen Universitäts-Poliklinik in der Kgl. Charité zu Berlin. Volume 3, 1911. Paper. Price, 6 marks. Pp. 122. Berlin: Julius Springer, 1912.

This is a summary of orthopedic publications appearing during 1911. It reviews in a brief, concise and critical manner a large number of articles covering the orthopedic field. An extensive bibliography is appended.

Medicolegal

Joining Causes of Action for Unauthorized and Unskillful Performance of Operation—Sufficiency of Consent to Operation before Examination—Measure of Damages—Skill Required

(Van Meter vs. Crews (Ky.), 148 S. W. R. 40)

The Court of Appeals of Kentucky reverses a judgment rendered for Miss Crews, the plaintiff, who charged that the defendant had operated on her without her consent and had performed the operation unskillfully, by reason of which she had suffered great pain and her health had been permanently impaired. The court says that Miss Crews had been suffering with a pain in the right side of the abdomen for about twelve or eighteen months and for two months she had been suffering with a pain on the left side of the abdomen. She called Dr. Van Meter, who, after making an examination of her, prescribed for her. After that she did not improve and he told her he was not satisfied with the examination he had made at his office and would like for her to go to the hospital, where he could make the examination more satisfactorily. She went to the hospital, and there, after the usual preparations had been made and several of her relatives had been summoned, she was placed under an anesthetic and an operation performed, which consisted in his taking out one of the ovaries and making an adjustment of the other. After that she remained at the hospital until the wound healed and then went home, but she was unable to stand straight and later had to submit to another operation, all of which, it was charged, was due to the unskillfullness of the first. The proof for the defendant showed that there was no neglect on his part and that what he did was according to the approved practice in such cases, although it turned out, in Miss Crews' case, not to relieve her.

It was insisted for the defendant that the plaintiff could not unite in the petition the allegations that the defendant performed the operation without her consent, and that he performed it unskillfully. It was said that if he performed the operation without her consent that was a trespass on her person, and that if he undertook to perform the operation with her consent, and performed it unskillfully, that was a cause of action for a breach of contract, which could not be united with an action for trespass to the person. But the court cannot see the force of this. The plaintiff had employed the defendant as her physician and had placed herself in his charge. If he operated on her without her consent, that was a breach of his duty to her; if he performed the operation unskillfully, that was also a breach of his duty. In other words, all that the defendant did was done by him as a physician, and under his employment as such. The status of physician and patient existed, and all that he did was done under that relationship. If the plaintiff was to recover at all, she must recover all her damages in one action; for, manifestly, she could not bring one action, alleging that the operation was performed without her consent, and another, alleging that it was performed unskillfully. If she could not present her whole case in one action, therefore, she would be denied remedy. Her whole case arose from the defendant's breach of duty as a physician, and she might, in one action, set up as many breaches of duty as existed. The court therefore properly refused to require the plaintiff to elect between the two grounds of recovery sued on.

The evidence heard on the trial tended very strongly to show that, though the plaintiff was averse to the operation, it was understood by her and her relatives, who were summoned to the hospital and consulted, that if, on the examination by the defendant, it was found that an operation was necessary, he would perform it while she was under the anesthetic. Both her uncle and her brother were sent for, and the matter was discussed carefully, not only with them, but with her; and, while there was some conflict in the testimony, there was evidence warranting the jury to conclude that the defendant understood, and had the right to understand, from all that passed between him and the plaintiff, that he was to perform the operation while she was under the anesthetic if, on the examination, he found that necessary. There was nothing in the evidence warranting a recovery in this action of punitive damages, as there was no evidence of bad faith, recklessness or oppression on the part of the physician.

The jury should have been instructed that, if the defendant understood, and had reasonable grounds to understand, from the words or conduct of the plaintiff that she was willing for the operation to be performed while she was under the anesthetic if, on his examination of her, he found it necessary, and on the examination he found the operation to be necessary, and he so performed it, then he had the right to perform the operation as by her consent. Reasonable grounds are such grounds as would warrant a man of ordinary prudence to so understand under the circumstances.

An instruction was radically erroneous which allowed the jury to find for the plaintiff such a sum as would fairly compensate her for her loss of health. Such a standard was too uncertain; for a jury might justly think that no reasonable amount of money would compensate a young woman for the loss of her health, and to give the jury such a measure of damages would be in effect to turn them loose without any criterion to guide them. The court should have told the jury that, if they found for the plaintiff, they should find for her in such a sum as would fairly compensate her for her pain and suffering, if any, and the permanent impairment, if any, of her power to earn money, which was the natural and proximate result of the operation being performed unskillfully, or without her consent, if it was so performed.

On another trial, the jury should be instructed that the defendant, in performing the operation on the plaintiff, was not required to possess or exercise the highest degree of skill, but in performing such operation he was bound to possess and exercise that degree of skill usually possessed by the profession of surgeons generally in that section of the country, and if the operation was performed by him with such skill, then it was not unskillfully performed, within the meaning of these instructions.

Dying Declarations Made after Refusal of Physician to Treat Abortion Case Without History—Construction of Amended Statutes with Reference to Privilege and Competency of Witnesses

(State vs. Law, (Wis.), 136 N. W. R. 803)

The Supreme Court of Wisconsin overrules all exceptions to rulings in this case wherein there was a conviction of a licensed physician of criminal abortion. The court says that one contention was that a refusal of a Dr. Dean to treat the patient until he procured from her a history of the case, either to enable him to treat her, or in his own protection, was such coercion of the patient or such inducement as to render incompetent, not only what she then and there told Dr. Dean, but all dying declarations thereafter made by her at the hospital to the same effect and under the same influence. It was argued that, having that origin, the dying declarations were tainted; no matter how frequently repeated thereafter, because of the nature of the inducement held out, the feeble condition of the declarant, and because it was shown by evidence that a person in such advanced stage of peritonitis, when septicemia has already set in, is not sufficiently conscious or intelligent to make a competent dying declaration. If the testimony relating to her mental condition were without dispute, and if the statement made to her by Dr. Dean was plainly a threat or inducement for her to make a charge against the accused, and it appeared she was still in that condition when she made the dying declarations, and still laboring under the duress or inducement of what Dr. Dean said to her, it would have been the duty of the trial court to exclude the dying declarations. But that was not the case. The statement of Dr. Dean did not suggest that she charge the accused with any crime. It was a very proper request for him to make under the circumstances. It probably had influence in inducing her to make disclosure

and to tell the truth. But that was merely incidental and a charge against the accused was not the direct result of the request at all, in case the accused had done nothing wrong or criminal. Several witnesses, who saw and talked with Mrs. O'Brien, the patient, at the hospital prior to and at the time of the dying declarations, testified to her mental competency in no uncertain language. Under such circumstances, the trial court would not be justified in excluding the dying declarations, but very properly admitted them in evidence.

Two physicians, Drs. Dean and Donovan, were in attendance on Mrs. O'Brien, and learned of the facts in the case by reason of their being in attendance. This information so acquired by them, and each of them, was necessary to enable them to prescribe for her. Each was sworn as a witness for the state, and testified concerning her mental capacity at the time she made the declarations mentioned, as to the symptoms observed and treatment given her, and also to what was discovered in the autopsy conducted by them on the body of Mrs. O'Brien. There was no error in that.

Section 4075 of the Wisconsin statutes, as amended in 1911, provides: "No person duly authorized to practice physic or surgery shall be permitted to disclose any information which he may have acquired in attending any patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician or to do any act for him as a surgeon." Before the amendment of 1911, the words "shall be compelled" appeared in this statute, instead of the words "shall be permitted," as the statute now reads. The amendment of 1911 brought Section 4075 more nearly in form with Section 4074, relating to confessions to clergymen, and with Section 4076, relating to communications by client to attorney. But Section 4078d provides: "No person shall be excused or privileged from testifying fully under oath in any prosecution brought under the provisions of Sections 4352 or 4583 of the statutes of 1898 or for any of the causes mentioned in either of said sections when so ordered to testify by a court of record or any judge thereof; but no person shall be prosecuted or subjected to any penalty or forfeiture for or on account of any transaction, matter or thing concerning which such person may so testify or produce evidence, except for perjury committed in giving such testimony."

This prosecution was under Section 4352 mentioned. It will be observed that the opening sentence of Section 4078d is broad enough to sweep away all privilege in such cases. Whether it should be interpreted and applied as broadly as its words might indicate need not be decided here. All that is necessary to consider in this case is whether the provisions of this section take away, in prosecutions for abortion, the privilege conferred by Section 4075, as amended in 1911. The court thinks it does. Counsel for the accused sought to limit the scope of Section 4078d by the concluding sentence of that section, which provides that no person shall be prosecuted or subjected to any penalty or forfeiture for or on account of any transaction, matter, or thing concerning which such person may so testify or produce evidence. The effect of such a construction would be to limit the sweeping words contained in the first sentence of the section to the privileges against self-incrimination. This the court cannot do. It restrains the statute unduly. The more reasonable interpretation is that the privilege against self-incrimination and the professional privilege of a physician are both taken away by Section 4078d; but, in order to render it valid and constitutional as to the first, the legislature added the last sentence in the nature of a proviso. This immunity from prosecution on account of anything which the accused is compelled as a witness to disclose is provided for in actions relating to miscarriage or abortion, by Section 4078d, although in this section this particular privilege is not mentioned, nor is the immunity confined to an accused person, but all privilege is apparently abolished as to all persons in respect to such criminal prosecution. Because of the nature of the crime and the necessity of resorting to medical evidence in order to establish its commission the court is satisfied that the privilege accorded by Section 4075, as amended in 1911, is, in cases like this, taken away by Section 4078d.

Testimony in the case was given by a director of the State Hygienic Laboratory and professor of bacteriology in the university, by the dean of the medical college at the state university, and by the professor of pathology at the university. None of these gentlemen had any license or certificate of registration as a physician in Wisconsin, and their testimony was challenged as incompetent under Section 1436 of the Wisconsin statutes, as amended, which reads: "No person practicing medicine, surgery or osteopathy shall have the right . . . to testify in a professional capacity as a physician or surgeon, or insanity expert in any case, unless he or she holds a license from the Wisconsin Board of Medical Examiners, or the certificate of registration hereinbefore referred to, with a diploma from a reputable medical college or society or a certificate of membership in a medical society, and has been duly recorded as a practitioner in the state of Wisconsin; provided, that nothing in this act contained shall be construed as restricting any court in a criminal action from receiving the testimony of any person as a witness." But the gentlemen mentioned were not within the statute quoted, because they were not persons practicing medicine, surgery or osteopathy; and they did not testify in a professional capacity as physicians, surgeons or insanity experts. The proviso of the statute would also remove the disqualification theretofore mentioned, so far as criminal cases are concerned. The mere fact that the science of medicine covers, includes or requires some knowledge of bacteriology, or chemistry, or botany or biology, or embryology would not exclude an expert in either of those sciences, under Section 1436 as amended.

Privilege Not Waived nor Statute Modified

(Cohodes vs. Menominee & Marinette Light & Traction Co. (Wis.), 135 N. W. R. 879)

The Supreme Court of Wisconsin says that in this personal injury case the defendant sought to elicit from the plaintiff's attending physician for about a week evidence tending to show that there was nothing serious about the alleged injuries, and that the plaintiff was endeavoring to perpetrate a fraud on the defendant, and was malingering as to her injuries for the purpose of increasing the damages. The inquiries propounded to the physician for this purpose necessarily embraced information acquired by him while he was attending the plaintiff in his professional capacity, to enable him to prescribe for her. He testified that he was called to attend her, and that whatever information he had as to the nature and extent of her injuries had been acquired by him while attending her as her physician. Such information is within the provisions of Section 4075 of the Wisconsin statutes and could not be disclosed over the plaintiff's objection. She did not waive her rights under this statute by testifying concerning her condition and the nature and extent of her injuries. Nor does the court perceive any basis for the claim that legislation requiring physicians to file death certificates in a public office and to make report of certain accident cases to local registers of vital statistics is a legislative declaration that the secrecy, as formally enjoined by the provisions of Section 4075, has been relaxed, and that the privilege thereof, in cases like this one, should be more restricted than formerly. There was no question of receiving evidence of facts embraced in any such certificate or report of the witness. The court properly restricted his examination on the points involved.

Writ of Prohibition Cannot Be Employed against Board of Examiners

(Jamieson vs. State Board of Medical Examiners (Okla.), 130 Pac. R. 923)

The Supreme Court of Oklahoma holds that the State Board of Medical Examiners in hearing charges filed before it pursuant to sections 4242-4246 of the compiled laws of Oklahoma of 1909 for the purpose of having revoked a license issued by it to practice medicine and surgery in the state, on the ground that the same was obtained through fraud, and also charging the certificate holder with unprofessional con-

duct, is engaged in the performance of a ministerial duty, and does not exercise judicial power, and a writ of prohibition thereto will not lie. The court says that the plaintiff in this case filed his petition in the district court of Logan county, and prayed for a writ of prohibition against the State Board of Medical Examiners, prohibiting the board from proceeding to hear and determine certain charges set forth in a certain complaint filed by the president and the secretary, respectively, of the board, the object of which was to have revoked the license of the plaintiff, theretofore issued by the board, to practice medicine and surgery in the state, on the ground that the same had been obtained through fraud; also from proceeding to hear and determine the complaint of the secretary charging him with unprofessional conduct, with the same object in view. The trial court, in effect, held the defendant to be an executive or ministerial board, to which the writ could not run. There was no error in that. The inquiry sought to be prohibited by the writ was in no sense the exercise of a judicial function by the board, and hence the writ could not rightfully run against it. A writ of prohibition will not lie to an executive or ministerial board to prohibit it from performance of ministerial or executive functions.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

May, LXVII, No. 425, pp. 849-1064

1 *Is Albuminuria Likely to Recur in Successive Pregnancies? J. M. Slemons, Baltimore.
2 *Treatment of Uterine Hemorrhage by Means of Roentgen Rays. G. E. Pfahler, Philadelphia.
3 Drug Treatment of Uterine Hemorrhages. H. C. Wood, Philadelphia.
4 Surgical Treatment of Uterine Hemorrhage from Non-Pregnant Uterus. W. Krusen, Philadelphia.
5 Thymus Death in New-Born, with Report of Case. E. P. Davis, Philadelphia.
6 Abstraction of Calcium Salts from Mother's Blood by Fetus, Cause of Rapid Progress of Tubercular Processes. J. G. Drennan, New York.
7 Idiopathic Peritonitis. A. Grotti, Columbus, Ohio.
8 Operative Treatment of Puerperal Septicemia. W. E. Darnall, Atlantic City.
9 Reaction in Those Operated on for Tuberculous Conditions. H. D. Furniss, New York.
10 Appendicitis During Pregnancy. B. Van Sweringen, Fort Wayne, Ind.
11 Ammonia Coefficient in Pregnancy with Report of Sixty Cases. A. S. Hotaling, Syracuse, N. Y.
12 Methods of Diagnosis in Lesions of Upper Urinary Tract. G. V. Brown, Detroit.
13 Rapid Dilatation and Accouchement Forcé. H. S. Lott, Winston-Salem, N. C.
14 Influenzal Meningitis. T. S. D. Grasty, Washington, D. C.

1. **Albuminuria of Pregnancy.**—From observations on twenty patients who were recovering from toxemia of pregnancy, Slemons found that, using the blood-pressure as a criterion, three groups can be distinguished, just as they may be from studying the urine. In every case when the toxemia was at its height the blood-pressure was high, rarely below 180 mm. Typically, the blood-pressure was higher in nephritis toxemia than in eclampsia; in the former he frequently noted a pressure of 250 mm. Furthermore, as each of these patients recovered, no matter what the underlying cause of the toxemia, the blood-pressure finally fell, but in some instances reached normal more quickly than in others. Fifteen of the twenty patients presented a blood-pressure curve which was near the normal at the end of two weeks. At this time, their general clinical condition was satisfactory and they were discharged from the hospital, though in many instances there was still a faint trace of albumin in the uncatheterized urine.

The opinion that these women had suffered from eclampsia, not from nephritis toxemia, and that they were unlikely to experience a toxemia again, has been verified in a number of instances. Two of the twenty patients in this series were observed throughout a month, and, at the end of that time, presented a blood-pressure of 175 mm. There was also a measurable amount of albumin in the urine, somewhat less than half a gram; in spite of these facts, and against advice, both these women left the hospital, insisting that they were well. One of them, however, has since passed through a normal pregnancy. The other died later and no autopsy was performed. Three of the twenty patients ran a persistently high blood-pressure for eight weeks and, therefore, seemed to the author to have some permanent kidney defect. The final observations of the blood-pressure before these patients left the hospital were, respectively, 160, 200 and 250 mm. The first had a marked albuminuric retinitis; the second gave a history of severe scarlet fever during childhood; the third has since suffered from albuminuria and coma in a second pregnancy. The author believes that such clinical facts support the conclusion based on the blood-pressure, that the kidneys were defective in these three cases.

Reviewing his observations in this series of twenty cases, Slemons is inclined to attach great importance to blood-pressure estimations during the convalescence from a toxemia of pregnancy. In this series, it appears to him that 75 per cent. of the women suffered from eclampsia and are unlikely to do so again; whereas, in 15 per cent. there was a strong presumptive evidence of a defect in the kidneys which will always complicate pregnancy. He was uncertain of the prognosis in 10 per cent. of these cases, because the pressure remained high for a month; but the subsequent experience of one of them has demonstrated that such a condition does not necessarily mean that a toxemia of pregnancy will recur.

2. **Treatment of Uterine Hemorrhage.**—Roentgenotherapy is regarded by Pfahler as the method of choice for the control of hemorrhage in patients approaching the menopause, in whom carcinoma can be eliminated. It is not the method of choice in patients under 40 years of age. It can be recommended in all cases of any age in which operation is contra-indicated. For the differential diagnosis, in order to determine the indications for this treatment, special skill in gynecology is required; and for the proper administration of the rays, special training in Roentgen technic is necessary. It is possible for a gynecologist to become a roentgenologist. It is also possible for a roentgenologist to become a gynecologist, but it is very unlikely that either one will master both. Therefore, Pfahler believes that each patient should be examined by a gynecologist and treated by a roentgenologist.

American Journal of Public Health, New York

May, III, No. 5, pp. 413-512

15 Necessity for Uniformity in National, State and Municipal Vital Statistics Reports. C. I. Wilber, Washington, D. C.
16 Relation of Morbidity Reports to Public Health Administration. J. W. Trask, Washington, D. C.
17 Misleading Mortality Statistics on Tuberculosis. P. P. Jacobs, New York.
18 Two Ways by Which Vital Statistics Can Be Made Useful to Health Office. G. W. Atherholt, Philadelphia.
19 Practical Value of Vital Statistics in South. W. S. Rankin, Raleigh, N. C.
20 Identification Records for Unknown Dead. T. H. D. Griffitts, Springfield, Ill.
21 Statement of Duration of Disease on Death Certificates as Determining Factor in Classifying Causes of Death. G. H. Van Buren, Washington, D. C.
22 Some Newer Problems and Some Newer Phases of Antituberculosis Warfare in United States. S. A. Knopf, New York.
23 Experiment in Schoolroom Ventilation. F. Bass, Washington, D. C.
24 Outbreak of Typhoid in Belleville, Ill. H. N. Parker, Champaign, Ill.
25 Methods for Eradication of Uncinariasis. J. A. Ferrell, Raleigh, N. C.

Annals of Surgery, Philadelphia

May, LVII, No. 5, pp. 593-783

26 *Arthroplasty. J. B. Murphy, Chicago.
27 Identity of Cause of Aseptic Wound Fever and So-Called Postoperative Hyperthyroidism and Their Prevention. G. W. Crile, Cleveland.

28 *Surgical Significance of Accessory Pancreas. T. Carwardine and A. R. Short, Bristol, England.
29 Cysts of Spleen. R. H. Fowler, Brooklyn.
30 *Pathologic Data Obtained from Ulcers Excised from Anterior Wall of Duodenum. W. J. Mayo, Rochester, Minn.
31 *Fatal Hemorrhage from Erosion of Gastroduodenal Artery by Duodenal Ulcers. J. E. Thompson.
32 *Acute Perforated Duodenal and Gastric Ulcers. J. B. Deaver, Philadelphia.
33 Resection of One-Third of Colon for Irreducible Intussusception in Infant Five Days Old. C. N. Dowd, New York.
34 Complications Following Surgical Operations. E. H. Beckman, Rochester, Minn.
35 Abolishing Pain After Operations with Nerve Block à Distance. L. Watson, Oklahoma City, Okla.

26. **Arthroplasty.**—Murphy discusses arthroplasty from the basis of his personal observations and experiences, describing in detail his technic for operation and after treatment. The subject is covered fully. He reports sixteen cases illustrating arthroplasties on all joints except the shoulder. The paper is well illustrated but its length and detail prohibit making an abstract for these columns which would do justice to the article. Therefore the reader is referred to the original. His conclusions are: The great majority of cases of ankylosis, the result of a metastatic arthritis ("inflammatory rheumatism" which is initiated with a chill) are avoidable. He is absolutely convinced that the contortion deformities following metastatic arthritis are avoidable. The acute arthritides, and especially those that have an initial chill, are surgical lesions from the very first day. The initial chill is a warning that ankylosis probably will occur, and therefore the limb must be kept in a good position from the very beginning and the interarticular pressure produced by involuntary muscle contraction must be overcome. This is best accomplished by some type of Buck's extension. This not only prevents the deformity, but greatly alleviates the suffering of the patient, and usually, we believe, prevents the occurrence of the ankylosis. The plaster cast in acute infections always favors ankylosis and should never be used. In tuberculosis it favors repair and therefore lessens the likelihood of ankylosis. Extension of sufficient weight to overcome the muscular contraction is the ideal means of preventing deformity and avoiding ankylosis. His final conclusion with regard to arthroplasty is that where the technic of the operation is carried out properly, in a primarily sterile field, the results far exceed orinal expectations. They can be secured uniformly, and when they are not secured the failure must be charged to some defect in technic or in the subsequent management of the case.

28. **The Accessory Pancreas.**—According to Carwardine and Short thirty-nine cases of accessory pancreas were on record in 1908. It was first described by Klob in 1859. The accessory pancreas is a small, rounded nodule which may be as large as a filbert, situated somewhere in the wall of the alimentary canal, though there is one case on record in which it was found to lie close to the umbilicus in the abdominal wall. More commonly, it is situated: (1) in the wall of the stomach, either near the pylorus, or the greater or lesser curvature; (2) in the wall of the duodenum, but detached from the true pancreas; (3) in the first eight inches of the jejunum; this is the commonest location, and both of the authors' cases fall into this class; (4) in the lower jejunum or ileum. In several instances it has been found near the ileocecal valve. In some cases it has been covered by a normal mucous membrane and serous coat; in others no villi have been present over it but it has bulged into the lumen of the bowel, as in the case figured. Histologically, it shows typical pancreatic structure and well-defined ducts. The accessory pancreas may give trouble in four ways: 1. It may produce mechanical alterations in the walls of the alimentary canal. 2. The accessory pancreas is liable to acute pancreatitis. 3. Accessory pancreas may develop chronic interstitial pancreatitis. 4. Accessory pancreas may complicate the diagnosis of the cause of abdominal symptoms.

30. **Ulcer of Anterior Wall of Duodenum.**—So far as Mayo has been able to observe, ulcers of the posterior wall of the duodenum present the same characteristics as those of the stomach; that is, a clean-cut, definitely punched-out area, attached closely to the pancreas and usually completely perforating the duodenum. They are protected posteriorly by a callus which forms the base of the ulcer. In such cases, however, an anterior contact ulcer will usually be found just opposite the lesion on the posterior wall. In four instances Mayo excised an ulcer on the posterior wall, suturing the defect from the mucous side. In each case the base of the ulcer was closely attached or fused with the pancreas and, since it was impossible to get at the posterior wall to apply an outer row of sutures, Mayo contented himself in two cases with a protecting suture at the upper and lower peritoneal angles. In one case a complete division was made of the duodenum after excision of the ulcer with direct union of the end of the duodenum to the end of the stomach. In the fourth case devitalizing mattress sutures were applied from the mucous side in such manner as to cut out the ulcer. The excision of these four posterior ulcers of the duodenum proved to be so difficult as contrasted with gastro-enterostomy that Mayo is not encouraged to continue the practice, although the patients recovered and remain well. He believes, therefore, that the excision of duodenal ulcers should be limited to those occurring on the anterior wall.

31. **Erosion of Gastroduodenal Artery.**—Two fatal cases of bleeding from duodenal ulcers in spite of the operation of gastro-enterostomy are cited by Thompson. In both cases the ulcer was situated on the posterior surface of the first portion of the duodenum, and in both the hemorrhage, which proved fatal, came on at a time when it looked as if the patients would recover from the operation. The first patient died thirty-four hours after the operation with all the symptoms of concealed hemorrhage, but as no autopsy was allowed it could be only surmised, from the position of the ulcer, that the gastroduodenal vessel was eroded.

32. **Perforated Duodenal and Gastric Ulcers.**—The criterion of value of any method of treatment, says Deaver, is the result obtained by its application. The combined statistics of many leaders in upper abdominal surgery show not only a smaller primary mortality with the complete operation in acute perforation of gastric and duodenal ulcers, but a smaller postoperative morbidity. Deaver has lost only one patient, a late case, with simple closure of the perforation. Seventeen patients with primary, and one patient with secondary gastrojejunostomy recovered and were discharged from the hospital in good health. This result, he believes, is sufficient argument and justification for his faith in primary gastrojejunostomy. Its application leads to a speedy, safe and complete cure with the least jeopardy to future health.

Archives of Internal Medicine, Chicago

April, XI, No. 4, pp. 565-867

36 Vasomotor Reflexes Elicited by Heat and Cold from Regions Devoid of Temperature Sensibility (an Unusual Case of Post-Typhoidal Neuritis). G. N. Stewart and W. B. Laffer, Cleveland.
37 Vasomotor Reflexes Elicited by Heat and Cold from Areas Deprived of Temperature Sensibility by a Traumatic Lesion. G. N. Stewart and O. C. Walker, Cleveland.
38 Method for Quantitative Determination of Pepsin by Using Colloidal Suspension of Egg Albumin. C. H. Neilson and E. Bonnot, St. Louis.
39 *Heart Size and Heart Function in Children Showing Orthostatic Albuminuria: Orthodiagraphic Study. M. H. Bass and H. Wessler, New York.
40 *Effect of Strychnin and Digitalis on Man. D. Marvin, Burlington, Vt.
41 Human Botryomycosis of Liver. E. L. Opie, St. Louis.
42 *Case of Foreign Body (Toothpick) in Heart. C. H. Bailey, New York.
43 *Respiration and Circulation in Epilepsy. L. J. Pollock, Galesburg, and W. L. Treadway, Jacksonville.
44 *Modification of Russo's Urinary Typhoid Test, with Report of Its Use in One Thousand Cases, and a Complete Bibliography. L. Neuman and E. B. Behrend, Washington, D. C.

39. **Heart Size and Heart Function in Children.**—In a series of cases of orthostatic albuminuria selected at random, Bass and Wessler say it will be found that a considerable number present evidence of relative cardiovascular insufficiency. These

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symptoms, in the great majority of cases, are not associated with any hypertrophy or dilatation of the heart. On the contrary, the heart is in many cases smaller than normal; nor does it show any gross evidence of weakness as dilatation after exercise, an explanation suggested by previous investigators. Although the hearts do not dilate after exercise, a considerable number of them fail to become smaller under these conditions. This failure to contract may perhaps be looked on as a restriction of the field of cardiac response. The condition known as the juvenile heart or "*Wachstumshypertrophie*" occurred three times in the authors' cases and can be distinctly recognized. The conception of pulse or heart instability must be restricted to a tendency of the pulse to become smaller and impalpable after exercise, a condition which they have found very common. In 30 per cent. of the cases they have found hearts of the drop type, especially associated with other stigmata of constitutional maldevelopment.

40. **Effect of Strychnin and Digitalis on Man.**—No effect on the rate of respiration was noted by Marvin in his strychnin experiments except from 1/20 grain, which produced an average increase of one per minute. This effect was not constant, a drop occurred occasionally, which was due largely to individual fluctuations occurring at the same time and without apparent cause. A slowing of the pulse-rate from all doses was noted, also a marked increase in blood-pressure from 1/30 to 1/20 grain. Practically no effect from 1/40 grain. Digitalis had no effect on the rate of respiration, but produced a slowing in the pulse-rate of eight beats per minute and a marked increase in blood-pressure which reached its maximum in five hours, gradually returning to normal after fifty hours. A persistence of action for fifty hours from a single dose of 14 minims of a standard tincture of digitalis was an interesting observation.

42. **Foreign Body in Heart.**—The foreign body in Bailey's case was proved to have reached the heart by way of the blood-stream, its point of entrance into the latter from the intestine having been demonstrated. The route traveled by the toothpick was a short one. Necropsy was performed six hours post mortem. Protruding 1.5 cm. from the posterior tip of the right auricle was the end of an ordinary wooden toothpick which measured 6.8 cm. in length. The other end could be felt within the auricle, pressing against its anterior wall at the right auricular appendage. Over this end the wall was thinned, white and covered with fibrin over a small area about 3 mm. in diameter. The toothpick was held in place within the auricle by a soft "chicken fat" clot. At the upper part of the pericardium posteriorly there was an area, 1 cm. in diameter, which was abraded, but not pierced, by contact with the end of the toothpick. On the posterior wall of the duodenum, 14 cm. beyond the pylorus, at the lower part of the descending portion where it lay directly over the inferior vena cava, was a small ulcerated area, about 5 mm. in diameter. Extending backward and upward from the base of this ulceration was a sinus, 1.5 cm. in length, which easily admitted a probe 2 mm. in diameter, leading directly into the inferior vena cava. The intestine was otherwise normal. In the anterior wall of the inferior vena cava, 8 cm. below the entrance of the hepatic vein was the opening of the sinus from the duodenum previously described. Surrounding this opening the wall over an area 5.5 cm. lengthwise of the vessel and 2.5 cm. transversely, showed a rough, eroded surface covered with a small amount of loose fibrin of a greenish color, suggesting bile staining. A small fibrin clot adherent to the edge of the sinus had evidently plugged it before death.

43. **Respiration and Circulation in Epilepsy.**—The authors claim that there are present in many cases of epilepsy rhythmic variations of blood-pressure other than those due to respiratory movements. The sequence of events relative to a convulsion is as follows: A preliminary rise in blood-pressure followed in series by a sudden drop of blood-pressure, a period of apnea, and then the convulsion. The blood-pressure was relatively low during convulsions of petit mal type and during some of the corresponding periods of the fits of the grand mal type. The pulse was rapid during the convulsions. A study of the changes in the respiratory and circulatory systems in some of the cases of epilepsy suggests that the site of discharge is in the medulla and pons (the "lowest level of fits" of Hughlings Jackson). Likewise it points to the medulla as participating in the discharge in all cases of epilepsy whether this discharge originates there or not.

44. **Modification of Russo's Urinary Typhoid Test.**—The modified technic, as used by the authors, is as follows: Make an aqueous solution of methylene-blue of such concentration that when thoroughly mixed, it will just be translucent. Using the ordinary test-tube, use a sufficient quantity of the methylene-blue solution to fill the test-tube just above the bowl. Then fill the test-tube with urine, and after thoroughly mixing, examine against a good daylight and note the color reaction. Emerald or mint green indicates a positive reaction, while any tinge of blue renders it negative. The constant positive reaction in typhoid and its rare appearance in other conditions, the authors believe, give this test marked corroborative value. A negative reaction is very good evidence that the condition is not typhoid. Its prognostic value is to be doubted, but its continued appearance in severe cases, and reappearance in relapses is important. Its simplicity strongly recommends it, with certain limitations, to wit, that a differentiation of the true greens from the bluish-greens is a matter of practice and experience. Its very early appearance will aid in isolating a suspected patient at once, and general prophylactic measures will be instituted.

Boston Medical and Surgical Journal

May 22, CLXVIII, No. 21, pp. 749-784

45 Treatment of Laryngeal Stenosis Following Diphtheria. D. L. Richardson, Providence, R. I.
46 Treatment of Chronic Stenosis of Larynx and Trachea. H. L. Lynah, New York.
47 Dietetic Treatment of Constipation. L. H. Newburgh, Boston.
48 *Favorable Influence of Periods of Protein Free Diet in Chronic Nephritis. H. W. Goodall, Boston.
49 Jackson Membrane. H. W. Baker, Boston.

48. **Protein-Free Diet in Chronic Nephritis.**—It is held by Goodall that a protein-free diet for a continuous period of from five to ten days can be maintained without harm to the individual With such a restriction the accumulated end-products of protein metabolism in the blood are promptly eliminated, the nitrogen content of the blood falls to normal and the kidneys and heart are given an opportunity to rest. Such a restriction may be followed by a low-protein diet for a considerable period of time, even in advanced cases, without a return of the disagreeable symptoms.

The following procedure, which was followed in the cases reported by Goodall, is advised as the dietary treatment of chronic diseases in which there is a retention of nitrogenous end-products. A protein-free diet should be given for a period of from five to ten days, according to the severity of the disease. At the end of this period amount of protein not exceeding 60 gm. daily should be added and maintained until (a) the resulting improvement of the patient will permit of a further protein increase (up to 90 gm. or 100 gm. as a maximum) or until, (b) the signs and symptoms indicate that there is a reaccumulation of waste products. In the latter event the protein free diet should be repeated. This same procedure may be employed at intervals of not less than six or eight weeks, or a single protein-free diet may be given as often as once in seven days, without injurious effects. As a caution it is to be advised that the diet be given under supervision, or controlled by the urinary nitrogen.

Colorado Medicine, Denver

May, X, No. 5, pp. 145-174

50 Intestinal Diverticulitis. D. P. Mayhew, Colorado Springs.
51 Desirability of Abdominal Exploration. L. Freeman, Denver.
52 Abdominal Adhesions and Kinks. F. Finney, La Junta.
53 Tumors of Bone. S. B. Childs, Denver.
54 Glaucoma: Diagnosis and Present Methods of Treatment. W. H. Crisp, Denver.
55 *Prevention of Typhoid. L. P. Barbour, Rocky Ford.

55. **Prevention of Typhoid.**—The following are the recommendations made by Barbour: First, compulsory sewer connection. Nothing you can do will improve health conditions so much as this one measure. Sewers should be extended to the uttermost limits of the town, and the town should be extended to take in all the suburbs, including the fair grounds. Second, where there are no sewers, and until sewer connection can be made, all privies should be made fly-tight. The room should be screened, but especially should it be impossible for flies to enter the vault. Third, privy vaults, though fly-tight, are still a menace to the cisterns of the neighborhood. Built as most cisterns are the walls often crack, but oftener become worn so thin as to permit seepage of soil water. It is this soil water that contaminates our cisterns. Therefore, the water from all cisterns should be tested each spring and as frequently thereafter as the health officer or householder may think necessary. Either this or close all cisterns. Fourth, careful protection of the city reservoir. Fifth, regulation of the selling of milk in the city. As a condition for receiving a license to sell, each seller should be rigidly required to report promptly all cases of sickness in his family, among his employees or the families of his employees. Sixth, strictly enforced measures for preventing the breeding of flies. To this end there should be compulsory cleaning of every lot, corral, stable yard, stable and barn every week from April to October, the refuse to be burned or hauled to a suitable place beyond the city limits. Seventh, proper quarantine of each typhoid patient. This implies thorough sterilization of the discharges of the patient, of all clothing worn by him, and of all eating utensils used. None but necessary nurses should touch the patient or handle any of the aforesaid clothing, etc., until after disinfection. Eighth and finally, antityphoid vaccination.

These measures, Barbour states, will prevent the spread of typhoid within the town. They will not prevent its introduction from without. No community can be absolutely safe from typhoid until the larger community surrounding it is free. There is now everywhere more typhoid in the rural districts, proportionately, than in the urban. This calls for action by county authorities. Supervision and control of sanitary conditions of farms is needed. The county authorities should especially watch all the construction camps on railroads, reservoirs and ditches. These have been the starting point of more than one epidemic. The sanitation of fair grounds, athletic parks, etc., should, where these are outside the city limits, be guarded by the county health officer. The best work could be done if there were cooperation of town and county authorities in a statewide campaign under the supervision of the State Board of Health. By such a campaign the disease could be driven from any state in two years' time; and the same measures that would eliminate typhoid would lessen other diseases.

Georgia Medical Association Journal, Augusta

May, III, No. 1, pp. 1-36

56 What General Practitioner of Medicine Can Do for Public Health. C. P. Wertenbaker, Norfolk, Va.
57 Health Conditions as They Exist in Most South Georgia Municipalities. A. D. Little, Thomasville.
58 County Boards of Health. R. V. Nottingham, Macon.
59 Need of Full Time County Health Officers. A. G. Fort, Atlanta.
60 Sanitary Disposal of Municipal Waste. R. L. Russel.

Illinois Medical Journal, Springfield

May, XXIII, No. 5, pp. 471-594

61 *Rationale of Hydrotherapy. F. P. Norbury, Springfield.
62 Sterilization of Insane, Criminal and Delinquent. H. D. Singer, Kankakee.
63 When Is Operative Treatment Indicated in Chronic Dyspepsia? W. H. Wathen, Louisville, Ky.
64 Practical Studies in Tuberculosis. C. L. Wheaton, Chicago.
65 Injuries to Lungs and Pleura; Report of Case. P. Z. McDonald, Chicago.
66 Technic of Surgery of Gall-Bladder and Bile Ducts. F. C. Eggert, Chicago.
67 Rationale of Salvarsan Treatment of Syphilis. E. A. Fischkin, Chicago.
68 Cardiac Arhythmia. E. K. Kerr, Chicago.
69 Road to Rational Medicine. E. P. Lyon, St. Louis.
70 Medical Men of To-Day. G. A. Zeller, Peoria.

61. **Rationale of Hydrotherapy in Mental Disease.**—Hydrotherapy, according to Norbury, is the most valuable and most generally available means of practice now in vogue. The effects noticed are sedative, tonic and eliminative. The sedative effects are secured through the application of the warm bath, the pack, the continuous or prolonged bath. Insomnia, restlessness, excitement, manic phases, etc., are the indications for the use of sedative treatment. Tonic effects are secured through the cold pack for fifteen minutes followed by the douche, massage, etc. These measures are indicated in depressed states, in dementia praecox cases, certain phases of paresis. Elimination is obtained through the douche, etc. These baths are taken daily and for a sufficient length of time to get results. An exact technical consideration of indications is necessary first as to form of bath, the manner of giving and clinical detail to be observed in each case. There are many physicians, Norbury continues, including some hospital managing officers even in Illinois, who do not appreciate the value of hydrotherapy, and who look on the apparatus and routine of practice as "fuss and feathers"—the apparatus as an "expensive toy"—and all because of ignorance, the lack of definite information and a tendency to cling to old idols. The treatment of mental disease has, through hydrotherapy, been revolutionized, the burdens of responsibility in treatment lessened by providing more precise, more scientific, more reliable methods of securing the three great indications in such treatment, viz., sedative, tonic and eliminative results without the undesirable results not infrequent in the train of certain drugs which are used to secure sedation, etc.

Illinois proposes to train her own operatives in hydrotherapy. She has decided to have a training station at Kankakee where a graduate in physical therapeutics will teach the practical technic and where physicians familiar with the principles and practice of hydrotherapy will conduct the class work. Norbury states most emphatically that general hospitals, private sanatoriums and even physicians' offices should have at hand the facilities to meet the indications for hydrotherapeutics as we now see them to-day. Every community of at least ten thousand inhabitants should have a complete equipment, which could be conducted as a private hydriatic institute, to which patients could be sent for treatment. Water companies could cooperate to make such an institute a credit not only to the community, but to the company and all who would cooperate in making water as a therapeutic agent available and serviceable to that community.

Iowa State Medical Society Journal, Clinton

May, II, No. 11, pp. 769-848

71 Medical Education at Iowa State University. D. S. Fairchild, Clinton.
72 Medical Department, Iowa State University. W. D. Middleton, Davenport.
73 University of Iowa, Medical Department, Since 1876. J. R. Guthrie, Dubuque.
74 Future of College of Medicine. J. G. Bowman, Iowa City.
75 What State Should Expect of Its Medical College. J. H. Trewin, Iowa City.
76 Pathogenicity of Waldeyer's Ring Relative to Aural Disease. P. R. Wood, Marshalltown.
77 Accessory Nasal Cavities. W. W. Pearson, Des Moines.
78 Pharyngeal Tonsils. R. D. La Force, Ottumwa.
79 Non-Suppurative Catarrhal Otitis Media. F. G. Murphy, Mason City.
80 Cases of Pernicious Anemia. W. L. Bierring, Des Moines.
81 Differential Diagnosis in Abdominal Trauma. O. J. Fay, Des Moines.
82 Thymus. J. F. Herrick, Chicago.

Journal-Lancet, Minneapolis

May 15, XXXIII, No. 10, pp. 275-300

83 Semeiotic Significance of Pathologic Findings in Infant Feces. C. P. Robbins, Winona, Minn.
84 Tumors of Testicle and Epididymis. H. T. Kenney, Pierre, S. Dak.
85 *Eclampsia: Its Cause and Treatment. W. Reid, Deerwood, Minn.
86 Vaginal Cesarean Section in Certain Cases of Eclampsia, Placenta Praevia, Pernicious Vomiting and in Hemorrhage Due to Premature Separation of Placenta. H. C. Cooney, Princeton, Minn.

85. Abstracted in THE JOURNAL, Aug. 31, 1912, p. 745.

Kentucky Medical Journal, Bowling Green

May 15, XI, No. 10, pp. 393-426

87 Fifteen Hundred Cases of Tuberculosis. D. S. Wilson, Louisville.
88 Suppurative Conditions of Upper Abdomen. B. F. Zimmermann, Louisville.
89 Renal and Ureteral Calculi. I. Abell, Louisville.

Medical Record, New York

May 24, LXXXIII, No. 21, pp. 921-966

90 *Abortive Pulmonary Tuberculosis. M.Fishberg, New York.
91 Therapeutics of Intestinal Auto-Intoxication. W. H. King, New York.
92 Blunders Made by Nature. A. Maverick, San Antonio, Texas.
93 Compulsory Detention of Homeless Tuberculous. E. G. Rankin, New York.
94 Tuberculides. W. P. Cunningham, New York.
95 Prevention of Adenoids. W. Brady, Elmira, N. Y.
96 Drop Method of Giving Ether with Closed Inhaler. C. P. Bull, Cananea, Mexico.

90. **Therapeutics of Intestinal Auto-Intoxication.**—King describes a form of local treatment for the eradication of putrefactive conditions when located within the large intestine, an eradication which he has found to be more or less permanent in its action, according to the thoroughness of the treatment, and the subsequent care of the patient's diet and hygiene. Starting with the premises that the colon bacilli feed on oxygen, that the putrefactive bacilli are destroyed by the same agent, and that the former must utilize all the available oxygen in the intestine before the latter can materially manifest themselves, King thoroughly oxidizes not only the surface of the lining of the large intestine, but also carries this oxidation within the glandular cells and tissues of the membranes. He first gives a high enema to empty the bowel of fecal matter, so that the antiseptic afterward employed will not be utilized solely in destroying this dead matter, as well as to clear the membrane that the action may be unimpeded on its surface, and thus enable a better osmosis or anaphoresis to take place. A colon rectal tube is employed. The tube should be well lubricated so that it will not impinge on the sphincter, as its easy passage through this muscle is necessary in determining whether it is progressing straight up the bowel.

The next point is the slow and careful introduction of the water. The bag is placed but little higher than the body of the patient. The water should flow very slowly to prevent a sudden damming up at the end of the tube, but be allowed to work its way back beyond the fecal mass, and at the same time to soften and percolate through it. For this preliminary injection King uses only plain water. If possible the patient should rest for a few minutes before going to the closet, where the bowl is thoroughly emptied. The patient is again placed in position and the tube is reintroduced. With this second injection an electric current is employed. A large electrode, which thoroughly covers the abdomen, is placed directly over the line of the transverse colon. To this is attached the positive pole of a continuous current. The other rheophore is attached to an instrument by means of which the current is made to traverse the fluid injected, thus making it the negative pole.

King believes that there is undoubtedly a certain amount of chlorin also set free by the passage of the electric current through the normal salt solution. As chlorin is strongly anaphoretic in its electrochemical affinity, it not only acts on the surface of the membrane of the intestine, but also carries it within the glands and follicles of the membrane itself, and it is here that its action is most needed. Anaerobic bacilli cannot thrive in the presence of oxygen, and the formation of the different groups of the anaerobic bacilli is because the colon bacilli have first consumed all the available oxygen. The oxygen thus set free in this treatment not only destroys the entire group of anaerobic bacilli, including Welch's bacillus which causes the putrefaction, but it also destroys the medium on which it thrives, and at the same time furnishes food for the normal bacilli, thereby building up a strong family of the normal group. In properly selected cases, King says he has never seen such positive results as this treatment produces. The number of treatments required varies as to the condition of the patient. In most cases from eight to twenty treatments given daily will suffice. The indican and sulpho-ethers gradually disappear from the urine. The skatol disappears from the feces, the indol is decreased, and the gas volume is reduced to from 12 to 18 per cent. The clinical results are manifest by the disappearance of the insomnia and other conditions depending on the auto-intoxication.

Missouri State Medical Association Journal, St. Louis

May, IX, No. 11, pp. 357-384

97 Spinal Anesthesia in Gynecology. G. Gellhorn, St. Louis.
98 Local Anesthesia in Minor Gynecology. S. J. Wolfermann, St. Louis.
99 Making of "Specialists," with Particular Reference to Oculists (Doctors) and Optometrists (Opticians). J. S. Weaver, Kansas City.
100 Julius Pagel and Pagel Collection of Books on History of Medicine in Washington University Medical School. G. Dock, St. Louis.
101 Need for State Care of Crippled Children and Advantages of System. D. C. McMurtrie, New York.
102 *Tincture of Iodin in Treatment of Fresh Wounds. T. G. Orr, New York.
103 History of Cass County Medical Society. J. S. Triplett, Harrisonville.
104 Ophthalmia Electrica; Report of Case. W. E. Shahan, St. Louis.

102. **Tincture of Iodin in Fresh Wounds.**—For eighteen months, while on the house staff at the New York Hospital, Orr has used the U. S. P. tincture of iodin in the treatment of fresh wounds, in the dispensary, on the ambulance and in the hospital. During this time he has treated nearly 1,000 patients with incised, lacerated and contused wounds, dogbite, compound fractures, traumatic amputations, etc., with excellent results. He describes the method as follows: The more simple the technic used the better. If the area about the wound needs shaving it should be shaved dry. Any loose tags of tissue or skin or foreign body should be removed with sterile instruments and not washed out. No water or watery solution should touch the wound. The tincture of iodin is first painted about the wound and allowed to dry for a short time, giving opportunity for penetration. Then with another bit of sterile cotton on a toothpick the wound itself is painted thoroughly. Dannreuther's method of injecting the deeper recesses of a wound with a medicine dropper is a good one but should not be depended on entirely in cases of puncture wound where there is a liability of tetanus infection. A sterile compress is then held firmly over the wound, if it is small, until hemorrhage is stopped, and a sufficient number of sutures applied to approximate the edges of the wound when indicated. In the large lacerated wounds the iodin may be poured into the wound after painting a free area about it. Drainage should, of course, be used when indicated, especially in the badly contused lacerated wounds where there is apt to be much oozing and the resistance of the tissues is much below par.

Northwest Medicine, Seattle

May, V, No. 5, pp. 119-148

105 *Pathology and Treatment of Hemangioma Cavernosum. M. M. Patton, Spokane, Wash.
106 Apepsia: Clinical and Laboratory Study. A. P. Lensman, Seattle, Wash.
107 Psychotherapy in Pulmonary Tuberculosis. J. L. Pomeroy, Monrovia, Cal.
108 Investigation of Friedmann Tuberculosis Cure. R. W. Matson, Portland, Ore.
109 Alcoholism; Syphilis; Tuberculosis. J. E. Crichton, Seattle, Wash.
110 Pseudovariola. G. C. Emery, Preston, Idaho.
111 Ovarian Cyst with Twisted Pedicle. O. B. Wright, Portland, Ore.

105. **Hemangioma Cavernosum.**—Hemangioma, according to Patton, occurrs more frequently in females than in males. They are often multiple and a predisposition of the vessels to dilation and hyperplasia is undoubtedly present. In Patton's five cases, at least, he would say that they were congenital and present, though not noticed at birth, and that a simple telangiectatic stage probably preceded the cavernoma formation. Hemangiomata cavernosa are tumors distinct and sepa-

rate from the skin and have a blood supply of their own. The cavernous angiomata present microscopically: (a) Dilated and tortuous blood spaces with a certain amount of regularity about arrangement. (b) Endothelial lining which may be thickened and present three or four layers. (c) Interstitial substance composed of parallel fibers of connective tissue which form framework of tumor. These tumors are usually easily removed if you keep well out into the healthy tissue. Removal of angiomas about the inner canthus of the eye and forehead is particularly dangerous on account of septic embolus and thrombosis of cavernous sinus.

Philippine Journal of Science, Manila

December, VII No. 6, pp. 475-536

112 Rôle of Stomoxys Calcitrans in Transmission of Trypanosoma Evansi. M. B. Mitzmain, Manila.
113 Susceptibility of Cockroaches to Plague Bacilli Inoculated into Body Cavity. M. A Barber, Manila.
114 Muscular Changes Brought About by Intermuscular Injection of Calves with Virus of Contagious Pleuropneumonia. W. H. Boynton, Manila.

Southern Medical Journal, Nashville, Tenn.

May, VI, No 5, pp. 289-354

115 Publicity as Factor in Securing and Enforcing Ordinances Providing for Control of Production and Sale of Milk. V. H. Bassett, Savannah, Ga.
116 Massage. C. Pope, Louisville, Ky.
117 Roentgen Diagnosis of Intrathoracic Lesions. A. L. Gray, Richmond, Va.
118 Phthisiogenesis. E. C. Thrash, Atlanta, Ga.
119 Early Recognition of Tuberculosis with Special Reference to Its Confusion with Malaria. W. R. Kirk, Hendersonville, N. C.
120 *Clinical Value of Tuberculins in Diagnosis and Treatment of Tuberculosis. W. J. Durel, New Orleans.
121 Individualizing Tuberculous Patient. L. B. Morse, Hendersonville, N. C.
122 *Relation of Gas Embolism to Production of Artificial Pneumothorax. S. T. Harris, Highlands, N. C.
123 *Status of Climate in Phthisiotherapy. T. Frazer, Asheville, N. C.
124 Few Surgical Complications in Abdomen During Typhoid. C. M. Remsen, Atlanta, Ga.
125 *Surgical Importance of Breast. E. D. Martin, New Orleans.
126 Grape Seeds in Pelvic Abscess. C. H. Cargile, Bentonville, Ark.
127 Eclampsia and Its Treatment. A. Y. Linville, Winston-Salem, N. C.
128 Cesarean Section. J. M. Wilson, Mobile, Ala.
129 Intranasal Deformities with Their Attendant Sequelae. C. B. Wylie, Chattanooga, Tenn.

120 and 125. Abstracted in THE JOURNAL, Dec. 14, 1912, p. 2181.

122. Abstracted in THE JOURNAL, Dec. 7, 1912, p. 2090.

123. **Climate in Phthisiotherapy.**—Climate according to Frazer is of value in the treatment of tuberculosis, although it takes rank after the hygienic-dietetic regimen. Generally speaking, he says that a stimulating climate is desirable, and some degree of elevation beneficial in the average case. People react differently to climate, one being stimulated, another depressed, by similar climatic conditions. Atmospheric and meteorologic conditions alone do not constitute climate, and climatotheraphy must embrace the not less important factors of food, accommodations, hygiene and environment. The financial state, the mental attitude of the patient, and the stage of the disease must all be taken into account before a change of climate is advised. If the patient, in order to obtain the advantages of climate, is obliged to suffer for want of proper food, care and rest, treatment at home will be more satisfactory; if he is able to afford at a resort the comforts and the supervision which are so essential, then the added factor of climate cannot but prove of distinct value.

Washington Medical Annals, Washington, D. C.

May, XII, No. 3, pp. 161-200

130 Contact Points Between Ophthalmology and General Medicine. H. Woods, Baltimore.
131 Hermaphroditism; Specimens. D. S. Lamb, Washington, D. C.
132 Use of Quinin and Urea Hydrochlorid as Local Anesthetic in Anorectal Surgery. L. Eliot, Washington, D. C.
133 Case of Ureteral Abscess. W. A. Jack, Washington, D. C.
134 Mentality of Alcoholics. D. P. Hickling, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 10, 1, No. 2732, pp. 977-1036

1 Intussusception. H. S. Souttar.
2 *Transverse Colostomy as Operation of Election. L. McGavin.
3 Urachal Fistula: Report of Case. J. E. Mitchell.
4 Enchondroma of Manubrium Sterni Successfully Removed by Operation. W. G. Richardson.
5 *Case of Abdominal Aneurysm Operated on by Means of Colt's Apparatus. J. R. Collins and C. Braine-Hartnell.
6 Chellotomy for Crippling Traumatic Arthritis of Hip-Joint. W. I. de C. Wheeler.
7 Interneuronic Synapse in Disease. B. H. Shaw.

2. **Transverse Colostomy.**—In twenty-six cases, colostomy was done by McGalvin in twenty cases by the transverse and six by the iliac method. Of the former three were done for non-malignant and seventeen for malignant conditions. Of the non-malignant one died of strangulation at three months, and one of phthisis at two years after operation, the third is alive and well to-day. Of the malignant cases five patients are alive to-day, one at three years, one at two years, two at eighteen months and one at a year from the time of operation; and in all of these this method of colostomy has fully justified the opinion McGavin has formed of it, as it has also done in all cases in which the patients have lived sufficiently long to allow of an honest judgment being formed.

5. **Abdominal Aneurysm.**—The aneurysm in this case extended from the right renal artery to the bifurcation of the aorta, and lay wholly to the right of the middle line. The external measurements of the aneurysm were 4½ inches in length by 3 inches in breadth. There was an oval opening from the aorta into the aneurysm, 2 inches by 1 inch, on its right wall, filled with firm clot. There was a further opening on the left and lower extremity, directed down outside the bifurcation of the left common iliac, encircling three quarters of its circumference. It was noted that, in spite of the fact that the man suffered from intense pain, there was no erosion of the vertebrae, and it is suggested that the pain was caused by the dissecting aneurysm along the left common iliac artery. The stomach was very dilated, its lower border reaching to the umbilicus. The thoracic viscera were normal.

British Journal of Children's Diseases, London

May, X, No. 113, pp. 193-240

8 *Diagnosis of Acute Abdominal Conditions in Children. E. Cautley.
9 *Mitral Dwarfism. F. P. Weber.
10 Summer Heat and Summer Diarrhea. H. C. Cameron
11 *Diphtheria of Stomach and Diphtheria Onychia. F. E. Tylecote.

8. Also published in the *Medical Press and Circular*, March 5, 1913.

9. **Mitral Dwarfism.**—Weber's patient was a girl, aged 13 years, but her size was that of a child of 10 years. Ordinary examination and roentgenoscopy showed that the heart was considerably enlarged to the left: the apex-beat was in the sixth left intercostal space in the anterior axillary line. A presystolic and diastolic thrill could be felt, and a loud double mitral murmur could be heard at the apex, showing that there was mitral obstruction, accompanied by mitral incompetence, the mitral incompetence doubtless accounting for the hypertrophy of the left ventricle. There was a little crepitation at the base of the left lung behind. Roentgenoscopy of the lungs with the fluorescent screen showed nothing special. Nothing abnormal could be felt by abdominal palpation. The teeth were fairly well formed. The nose was somewhat "saddle-shaped," but there was a history of past injury by a fall. The thyroid appeared to be rather small. There was no pubic or axillary hair. Menstruation had not yet commenced. The urine was free from albumin and sugar. The pulse (after examination) was 100 to the minute, of moderate pressure. Wassermann, negative; von Pirquet, negative.

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1913

There was no history of past rheumatism and no evidence of syphilis or tuberculosis. Weber had hardly a doubt that the cardiac disease was of rheumatic origin. The dwarfism in this case he regards as a sign that the mitral disease commenced at a relatively early period of extra-uterine life, long before the period of maximum normal development. Of the mitral obstruction and the mitral incompetence he considered the former to be the more important factor in the etiology of the dwarfism. This dwarfism he thinks may be best explained as the expression of a conservative adaptation or conservative hypoplasia of the whole body—Nature's attempt to limit the growth of the patient in accordance with the limited arterial blood-supply. Such a conservative hypoplasia is to be contrasted with the better-known conservative vital process known as compensatory hyperplasia, which is illustrated in this case by the hypertrophic enlargement of the left ventricle to make up for the regurgitation of blood through the leaky mitral valve.

11. **Diphtheria of Stomach.**—A male child, aged 3 years, was first seen by Tylecote on the fifth day of a very severe attack of diphtheria, and up to that time had been given no antitoxin. Patient had a subnormal temperature and was very toxic in appearance; there was false membrane covering the posterior pharyngeal wall, tonsils, uvula, the whole of the soft palate, and extending forward on the hard palate almost up to the teeth. Considering the extent of the membrane and the duration of the disease without any antitoxin treatment, the case was regarded as hopeless from the first, but in order to give the paatient any possible chance Tylecote injected 8,000 units of antitoxin at once into the left median basilic vein, following this the next morning by a similar injection into the right median basilic. In the forty-eight hours after this he gave him three more injections of a similar amount of antitoxin subcutaneously. However, he died of toxemia on the tenth day of the attack, having vomited blood the day before and having developed scattered petechiae about the body, both not uncommon signs in toxic diphtheria.

The post-mortem examination showed nothing unusual for this type of case, except the stomach. The mesenteric lymph-nodes were deeply injected; there was toxic myocarditis; the left ventricle contained adherent fibrinous clot; the superior longitudinal vein contained a thrombosis; the bulk of the blood was in the abdominal cavity—all of these the usual post-mortem findings for this class of cases. The stomach mucosa was covered by a typical diphtheritic membrane. It was loosening in places, but none had separated at the time of the examination. It was definitely limited to the boundaries of the stomach, and did not extend into the esophagus, nor yet into the duodenum. Smear preparations were made at the time from fragments of the false membrane and typical clumps of Klebs-Loeffler bacilli were easily found. At the time of the post-mortem examination considerable swelling of the mucosa was evident, and on stripping off the membrane in places the hemorrhagic injected state of the mucosa was very marked. Tylecote regards this case as true diphtheria of the stomach, or diphtherial gastritis, and not, as some of the recorded cases are, merely a membranous or diphtheritic gastritis, due to circulation of the diphtherial toxins in the blood-stream.

Glasgow Medical Journal

May, LXXIX, No. 5, pp. 321-399

12 Passing of Tuberculosis. R. W Philip.
13 *Cases Illustrating Certain Urinary Conditions In Women Associated with Frequent or Painful Micturition. D. Newman.

13. **Certain Urinary Conditions in Women.**—Newman cites eight cases: 1. *Bacillus coli* infection of bladder at fifth month of pregnancy. Incomplete recovery; continued irritation of bladder during five years, slight pyuria in acid urine, slowly and steadily increasing pain during and after urination. Thickening of mucous membrane at the neck of bladder and urethra. Application of phenol to urethra, and flushing of bladder. Cure. 2. Frequent urination for two years, with pain only on distention of the bladder, disappearing when emptied. Latterly, pain always present. Moderate pyuria; 5 per cent. pus containing tubercle bacilli; no hematuria. Marked hyperemia of bladder and caseous deposit on floor. Curetted through urethra. Tuberculin R. Well. 3. Five years persistent frequency in micturition. Relieved only by rest and heat. During last three months symptoms resembling stone in bladder. Constant pyuria. Moderate occasional hematuria. Neck of bladder and urethra congested, and small superficial erosions. Phenol applied twice. Cure. 4. Involuntary nocturnal micturation since infancy. Complete control during the day and while awake, no pain, occasional slight pyuria, very acid urine and uric acid in considerable amount. Irrigation and installations. Cure. 5. Long-standing *Bacillus coli* and staphylococcus infection of bladder. Very frequent micturition and severe pain, hematuria and pyuria variable. Marked congestion of mucous membrane of the bladder and urethra. Suprapubic cystostomy, and phenol applied to neck of bladder and urethra. Almost complete relief of symptoms. 6. Very painful and frequent micturition from staphylococcus infection of bladder. Pyuria and hematuria. Only 2 ounces of urine retained. Acute catarrh of base. Instillation of silver nitrate. Suprapubic drain. Lactic bacillus cultures and irrigation. Cure in six weeks. 7. Sudden stoppage of flow during act of micturition, followed by severe spasm of the neck of bladder. Polypi removed. Cure. 8. Movable right kidney causing severe pain at end of micturition, probably by dragging on the right ureter when bladder was emptying itself. Nephrorrhaphy. Cure.

Journal of Laryngology, Rhinology and Otology, London

May, XXVIII, No. 5, pp. 225-280

14 Jarisch-Herxheimer Reaction in Organ of Hearing After Treatment by Salvarsan. K. Theimer.
15 Significance of Fever in Cases of Mastoiditis Complicating Acute and Chronic Suppurative Otitis Media. R. Verel.

Journal of Tropical Medicine and Hygiene, London

May 1, XVI, No. 9, pp. 129-144

16 Effect of Drainage on Health in City of New Orleans; Statistical Study. J. B. Guthrie, New Orleans.
17 Treatment of Suppression in Blackwater Fever. H. S. Stannus, Zomba, Nyassaland.
18 Spider's Web and Malaria. F. Knab, Washington, D. C.

Lancet, London

May 10, I, No. 4680, pp. 1285-1362

19 *Physiology of Open-Air Treatment. L. Hill.
20 "Colds in the Head." L. Hill and F. F. Muecke.
21 *Symmetrical Necrosis of Cortex of Kidneys Associated with Puerperal Eclampsia and Suppression of Urine. R. Jardine and A. M. Kennedy.
22 Alimentary Toxemia. W. E. Dixon.
23 Chronic Intestinal Stasis. C. H. Fagge.
24 Abnormal Intra-Abdominal Developmental Adhesions. (To be continued.) H. M. W. Gray and W. Anderson.
25 Prognostic Significance of Secondary Polycythemia in Cardiopulmonary Cases. F. P. Weber.
26 Difficult Labor Caused by Fetal Ascites. S. G. Luker.

19. **Physiology of Open-Air Treatment.**—Hill is convinced that the whole of the effect of open-air treatment is due to the movement, temperature and moisture of the air and has nothing to do with its chemical properties. Conformity to a better mode of life will enormously increase the health and happiness of everybody. Modern life is tending to put people into confined places, heated by convectors, with perfectly made windows, no draughts and that kind of thing, and it is diminishing the metabolism and vigor, health and happiness of everybody, quite apart from causing consumption. Man cannot go straight into these artificial conditions when he has been for a million years living an outdoor life, facing every element, wind, cold and rain. What must be done is to compromise and arrange matters so that we may get open-air exercise and exposure to wind and weather. Do not put up great skyscrapers or have artificial cellars for people to live in, but have facilities for open air, and playing fields, and exercises for the body.

21. **Necrosis of Cortex of Kidneys.**—The kidneys in the two cases cited by Jardine and Kennedy were in each case

the seat of symmetrical necroses of the cortex. The necrosis was more or less limited to the outer two-thirds of the cortex, and in degree it corresponded in each case with the duration of the suppression of urine. In the two older patients the necrosis was more or less uniform and separated from the living inner third of the cortex by a hemorrhagic zone, and was more advanced in the older case. There was extensive thrombosis of the cortical blood-vessels, which did not extend beyond the margin of the necrotic area, and did not involve the vascular arches, and which was more wide-spread in the oldest case. In the earliest case the necrosis was of a very patchy character, and in the neighborhood of the patches there was intense congestion. Thrombosis of the cortical blood-vessels in this case was conspicuous by its extreme infrequency; in some of the necrotic areas thrombosed capillaries were found, but only rarely were any of the minutest arterioles thrombosed. The authors are inclined to the view that the cause of the necrosis in the kidneys is the same as that which causes necrosis in the liver, and that the thrombosis in the smaller cortical renal arteries is secondary to the necrosis of the renal cells. What, then, initiates the necrosis? It is the deleterious influences on the cells of the eclamptic toxin, whatever it may really be.

Practitioner, London

May, XC, No. 5, pp. 777-908

27 *Peripheral Stasis. J. F. Goodhart.
28 Diagnosis of Acute Abdominal Conditions of Children. E. M. Corner.
29 Sequel of Case of Acquired Chronic Acholuric Jaundice—Possibly Case of Tertiary Visceral Syphilis with Pyrexia and Extreme Cachexia. F. P. Weber.
30 Case of Chorion-Epithelioma of Retained Testis with Multiple Metastatic Growths. T. S. Tirumurti.
31 Hairiness or Hypertrichosis and Its Treatment. D. Freshwater.
32 Gonorrheal Urethritis Anterior. A. L. Sachs.
33 Ocular Diseases in Association with Diabetes Mellitus. D. M. Mackay.
34 Mental Suggestion by Transference. L. F. Winslow.
35 Influence of Thyroid on Blood-Pressure. H. E. Waller.
36 Testing of Symptoms. K. Digby.
37 Ovarian Dyspepsia. H. G. Webb.
38 Treatment of Erysipelas. F. S. Arnold.

27. **Peripheral Stasis.**—Under the heading "blue brains" Goodhart places instances of such people as have blue hands and, what he calls, St. Paul's fingers—for they die daily, even hourly—they have chilblains, their ears and noses may be red or blue, and associated with such surface appearances there are certain cerebral sensations on which Goodhart lays particular stress. The condition is found in males and females, adults, boys and girls, but is much more common in females than in males, and, it is clearly a part of Raynaud's disease; perhaps a mild and distributed form of that disease. But cold blue extremities and dead fingers are its most common symptoms and paroxysmatism is also a usual feature. But, besides these in the extremities, there are many other conditions associated. Looking over many of his cases Goodhart has noted, as has been shown in part, flushed and blue noses and ears, epistaxis, neuralgia, headache, migraine, all sorts of cerebral sensations, such as a cold feeling in the head, stupidity, woolliness, a far-away feeling, a double self, giddiness, dreaminess, depression, tinnitus, deafness, fainting, falling sickness.

He has seen it several times with anorexia nervosa and melancholia, and it must be a very common feature indeed in the practice of lunacy. But other conditions also have to be considered, such as asthma, breathlessness, heart attacks and arhythmia, puffiness and dropsy. They are all described by Goodhart as conditions of feeble circulation, and, more or less, at the back of their heads many of these people connote an inferior pump, a failing heart. But, he says, it is not due to a failing heart; it is a disturbed peripheral circulation. Although the effect is different, it concerns itself with the same mechanism as blushing and the phenomena of climacteric flushing of women, each clearly a peripheral phenomenon and not a cardiac one. As to treatment, he cites one case in which the abdomen was opened, the pelvis explored and a small residual abscess was found about the appendix; the pus was evacuated; the patient was completely cured, and she remained well for some three and a half years, when she died from embolism after the removal of a rapidly growing uterine fibroid. As a rule, however, the treatment is strict hygiene and a carefully regulated diet.

Journal de Médecine de Bordeaux

May 4, XLIII, No. 18, pp. 275-288

39 *Destruction of Leukocytes in Nephritis and in Acute Infectious Diseases. (La fragilité leucocytaire dans les maladies infectieuses.) J. Carles and P. Mauriac.
40 *Circumcision of Leg for Varicose Ulcer. (Traitement des ulcères variqueux par la methode de Moreschi modifiée.) A. Charrier and M. Bardon.

39. **Destruction of Leukocytes in Nephritis and in Acute Infectious Diseases.**—Carles and Mauriac are convinced that the fragility of the leukocytes is an important index of the resisting powers of the organism and is thus useful for the prognosis in many conditions. They agree with Feuillié that in a certain proportion of cases albuminuria is the result less of pathologic conditions in the kidneys than of lessened resisting powers on the part of the blood corpuscles, especially the leukocytes. They have been making a special study of this question, and report the findings in fourteen cases of nephritis, in two healthy persons, and in seven cases of pneumonia, diphtheria, acute rheumatism or typhoid fever. They estimate the numbers of apparently sound and much destroyed leukocytes in a smear, counting across the field on a straight line, and state that in health the broken-down leukocytes number about 7 per cent., but in nephritis the figure runs up to 40 or even 64 per cent.; the larger numbers correspond to severe impairment of the general health. Their work was all done on adults, and they call attention in particular to the way in which the leukocyte fragility index dropped from 24 to 7 per cent. in a case of diphtheria in a few hours after injection of antitoxin. In a case of dysentery, the fragility index dropped as the patient improved, but rose again to the first high figure or above during a relapse. In a case of typhoid of a severe type, the index was very high at first but later the leukocytes became more resistant; this occurred immediately after a profuse intestinal hemorrhage, showing that loss of blood is liable to affect the fragility index. The technic for determining the index is simple: A solution of 6 gm. of sodium citrate and 7 gm. of sodium chlorid to the liter of water is the vehicle employed; 20 drops of this solution and 10 drops of distilled water are mixed and 1 drop of blood is added. After waiting twenty minutes, the tube is centrifuged and the sediment is spread on a slide with a piece of cigarette paper held by one edge and resting its weight at the other end of the specimen. With a little practice it soon becomes a simple routine procedure and permits instructive comparison of conditions, especially with charts, such as he appends, showing the albumin, amount of urine, temperature and fragility index.

40. **Circumcision of Leg for Varicose Ulcer.**—Charrier and Bardon have applied what they call Moreschi's technic in three cases of intractable varicose ulcer in two women of 48 and a man of 27. The rapid and complete cure of the distressing affection has convinced them of the superiority of this method, in cases contra-indicating excision of the saphenous vein. It can be done under local anesthesia; the healing was complete in their cases in much less than a month. A circular incision is made about 4 cm. above the ulcer, carried down to the fascia, with careful hemostasis and suture. Moreschi makes a second circumcision above the ankle, but this is generally regarded now as superfluous.

Presse Médicale, Paris

May 3, XXI, No. 36, pp. 357-368

41 Diagnosis of Disease of the Chest Before Percussion and Auscultation Were Invented. E. Rist.
42 Advisability of Utilization of Insect Aids in Destruction of Noxious Species. E. Brumpt.
43 Exanthems as Symptom of Leukemia, etc. A. Nanta.

Semaine Médicale, Paris

April 30, XXXIII, No. 18, pp. 205-216

44 Ileus from Compression of Intestine Between Gravid Uterus and Promontory. (Autour de l'occlusion intestinale d'origine gravidique et de son mécanisme.) R. de Bovis.

May 7, No. 19, pp. 217-228

45 *Behring's Vaccination Against Diphtheria. (Sur un nouveau moyen préventif contre la diphtérie.) E. v. Behring.

45. Behring's Method of Vaccination against Diphtheria.—Behring's communication at the recent annual meeting of German internists created quite a sensation. It was mentioned in the Berlin Letter, May 31. Behring insists that his method of immunization with a combination of antitoxin and very virulent diphtheric poison has some entirely new features. It was rendered possible by his recognition of the fact that the ass, monkey and other large animals behave differently from guinea-pigs in the matter of response to immunizing injections and human beings still more so. He reviews the various experiences that have been made with his remedy to date as it has been applied in about eighty cases. No dangerous reaction was observed in any instance. It seems to confer immunity similar to vaccination against small-pox, without injuring the health but rendering the individual long immune to the disease. Before injecting the new vaccine he examines the blood for the exact antitoxin content, and then again three weeks after the vaccination and again later at regular intervals. One child thus vaccinated had its antitoxin figure run up to 600,000, breaking the record. He states that the aim of his preventive vaccination is to confer lasting immunity and also to obtain an antitoxin of human origin which may be used on others for homogenic vaccination. Fifteen years ago he declared his conviction that a homogenic antitoxin would probably confer much more lasting immunity than a heterogenic antitoxin. His research on horses, cattle and goats has confirmed this principle of the greater permanency of the immunity when the antitoxin is derived from the species to which the vaccinated individual belongs.

Beiträge zur klinischen Chirurgie, Tübingen

April, LXXXIII, No. 3, pp. 451-739

46 *Tumors in the Pineal Gland. (Zur Pathologie und Operabilität der Tumoren der Zirbeldrüse.) H. Rorschach.
47 After-Effects of Suture of Nerves. (Ergebnisse der Nervennaht.) H. Ströbel and Kirschner.
48 Scapular Cracking Sound. (Scapularkrachen.) W. Lobenhoffer.
49 The Blood-Picture with Goiter. (Das Blutbild bei Strumen und dessen Beeinflussung durch die Strumektomie.) E. Nägelsbach.
50 Local Anesthesia and Nerve Blocking. (Zur Lokal- und Nervenleitungsanästhesie.) A. W. Meyer.
51 Fractures of Joints. (Zur Diagnose und Behandlung einiger Frakturen besonders der Gelenke.) A. W. Meyer.
52 Operations on the Ears Under Local Anesthesia. (Die Radikaloperation des Ohres in Lokalanästhesie, ihre Technik und Nachbehandlung.) D. Kulenkampff.

46. Tumors in the Pineal Gland.—Rorschach reports a case in a young man who died the second day after the second step of the operation for removal of the tumor. Rorschach discusses the findings and the accessibility of such tumors and then reports the successful removal of a tumor in the corpora quadrigemina of a young man of 27. He states that forty-seven cases of pineal gland tumors are on record; the fifteen patients with sarcoma were between 10 and 20 years old and all but one were males, as also the four carcinoma patients (ages 19 to 24), the six with glioma, the five with teratoma and each of the other varieties except the eight cystoma cases which were all in women except two. The features of the cases all confirm the assumption that the pineal gland is concerned in the development of the secondary sexual characters in males. Children with pineal gland tumors show giant growth and premature development of the genitals and hair on the body. One girl of 9 was obese but the genital organs were apparently normal. Marburg is inclined to accept that insufficiency of pineal functioning leads to hypertrophy of the genitals while excessive functioning leads to the pineal type of obesity. In the personal case reported by Rorschach the young man had been employed as a kitchen chef and had been intelligent and industrious until the last two or three years when he became irritable and gradually developed hallucinations. He was placed in an asylum for the insane where symptoms developed suggesting a tumor in the pineal gland, as described in detail. He was inclined to obesity and the testicles were undescended; the case evidently belongs to the class of hyperpinealism; in fact the tumor contained large amounts of pineal gland tissue.

Berliner klinische Wochenschrift

April 28, L, No. 17, pp. 765-812

53 *Arteriosclerosis. A. Fraenkel.
54 Infectiousness of Human Syphilitic Material for Rabbits. (Weitere Mitteilungen über die Infektiosität des Blutes und anderer Körperflüssigkeiten syphilitischer Menschen für das Kaninchen.) P. Uhlenhuth and P. Mulzer.
55 *Febrile Conditions in Relation to Digestion. (Infektion und Verdauung.) L. F. Meyer.
56 *Biologic Tests for Pregnancy and Cancer. (Verwertbarkeit der Abderhalden'schen Fermentreaktion bei Schwangerschaft und Carcinom.) N. Markus and A. Münzer.
57 Childbirth in Elephantiasis. (Schwangerschaft, Geburt und Wochenbett bei ausgedehnter halbseitiger Teleangiektasie und Varicenbildung mit lymphangiektatischer Elephantiasis.) H. Drews.
58 Diabetes and Non-Diabetic Glycosuria in One Person. (Diplomelliturie.) H. Stern (New York).
59 *Treatment of Neuralgia of the Trigeminus by Injection of Alcohol into the Gasserian Ganglion. A. Loevy.

53. Arteriosclerosis.—Fraenkel remarks that the term "atherosclerosis" describes better the mechanical changes in the walls of the vessels, and it has the advantage of being applicable to analogous processes in the veins and in the heart valves. In practice, however, the involvement of the arteries is of such paramount importance that we are justified in retaining the old term "arteriosclerosis." He emphasizes the importance of general hygiene and moderation in all things in preventing and relieving the disturbances from arteriosclerosis, and urges the necessity for tentative antisyphilitic measures in younger patients. Acute infectious diseases seem to promote the development of changes of this kind, especially influenza, as also severe and long-continued emotional stress and worry. Neurasthenics are particularly liable to develop arteriosclerosis early, according to his experience. He reviews its various manifestations in detail.

55. Influence of Fever on Digestion.—Meyer has been studying this subject on dogs with a Pawlow isolated stomach sac. The tests were numerous and varied, and in all the secretion of gastric juice was materially reduced, proportional to the severity of the febrile disturbance, even with aseptic fever from injection of turpentine. The gastric secretion dropped to one-third or one quarter. If these findings can be applied to human beings they readily explain the digestive disturbances with fever. In infants especially, the lack of the bactericidal hydrochloric acid permits proliferation of bacteria in the intestines which interfere with normal digestion and bring on vomiting, diarrhea and loss of appetite. It is possible that febrile infections have an inhibiting influence on other glands involved in digestion as well as on those secreting the gastric juice.

56. Serodiagnosis of Pregnancy and Cancer.—Markus reports the application of Abderhalden's technic to twenty pregnant women and in eleven cases of carcinoma, the results all corroboratory.

Münzer remarks that Abderhalden's work has brought into prominence the pathogenic importance of the secretion from pathologically altered gland substance; besides hypersecretion and hyposecretion of the ductless glands we must now recognize the morbid secretion, the throwing off of unfinished or morbidly altered substances from the gland. As they are not ripe to be taken into the circulation, they act as a foreign material and are liable to do great harm. Not the quantity of the secretion of the gland but its quality is the condition for health or for disease. Fauser was one of the first to apply practically the knowledge learned from serodiagnosis. He found substances foreign to the blood circulating in the blood-stream in various forms of mental disease. (Abstr. 63, p. 949, THE JOURNAL, March 22, 1913.) He found a substance from the genital glands circulating in the blood-stream in cases of dementia praecox, and Münzer regards this as pointing

the way to discovery of the causes of mental disease; we are no longer groping in the dark but have now a light to guide us. He adds that the cerebrospinal fluid should also be examined for foreign elements, testing the fluid for brain substance in dementia praecox and general paralysis. Although we have no means to act directly on the morbidly perverted glands yet we can exert an influence by administering gland substance from the antagonistic organs. It is possible that in dementia praecox a combination treatment with tissue from the adrenals, hypophysis and pineal glands might annul the disturbing influence from the pathologic glands.

59. **Alcohol Injections into the Gasserian Ganglion.**—Loevy has been applying on forty cadavers the method of injection of alcohol into the ganglion through the oval foramen and discusses special points in the technic. He then reports the successful application of the method to a man of 77 with unbearable neuralgia during the last three months, with severe arteriosclerosis and bronchitis. About 0.8 c.c. of alcohol was injected and the man said that he felt as if that side of his head had been struck by lightning but after a minute or two all pains ceased. He could eat at once without a trace of pain and there has been no recurrence during the nearly five months since. The patient regards his relief as an actual miracle.

Deutsche medizinische Wochenschrift, Berlin

May 1, XXXIX, No. 18, pp. 825-872

60 Insoluble Antimony Salts in Small Doses Effectual in Treatment of Trypanosome Diseases. (Neue Prinzipien und neue Präparate für die Therapie der Trypanosomeninfektionen.) W. Kolle, O. Hartoch, M. Rothermundt and W. Schürmann.

61 Serotherapy of Tuberculosis. (Das Marmorek-Serum in der Behandlung der Lungentuberkulose.) K. Heilus and M. Rosenberg. Commenced in No. 17.

62 *Hemorrhage from the Lungs After Perforation of Aortic Aneurysms. F. Hampeln.

63 *Anatomic Bases for Placenta Praevia and Their Importance for Treatment. O. Pankow.

64 Congenital Hematoporphyria and Beard Growth in Women. C. Hegler, E. Fraenkel and O. Schumm.

65 Resisting Powers of Red Blood-Corpuscles Not Reduced in Tuberculosis. (Resistenzbestimmung der Erythrozyten bei Tuberkulose.) K. Weihrauch.

66 Tumors in the Omentum. (Zur Genese der Netztumoren—Epiploitis plastica.) E. Holländer.

67 Modified Technic for Wassermann Reaction. (Zur Modifikation der Wassermann-Neisser-Bruckschen Reaktion nach M. Stern.) L. Quadflieg.

68 Herpes of the Brow with Bacteria Found in Gasserian Ganglion. A. Sundc.

69 Exanthem After Use of Copaiba. (Ueber das gehäufte Auftreten von Exanthemen nach dem Gebrauch von Copaivabalsam.) W. Fischer.

70 Correction of Outstanding Ears. (Knorpelfaltung bei abstehenden Ohren und Othämatom.) Wiemann.

62. **Bleeding from the Lower Air Passages with Aneurysm of the Aorta.**—Hampeln states that in his 108 cases of aneurysm of the aorta it had perforated into the trachea or a bronchus in fifteen, and in ten in this group the bleeding was prolonged over a considerable period before the final fatal gush. Bleeding may occur from the lower air passages or lungs with an aneurysm but due to some independent cause, or to some infarct or other trouble directly connected with the aneurysm. Or there may be long continued prodromal slight hemorrhages.

63. **Treatment of Placenta Praevia.**—Pankow analyzes the anatomy of the region calling attention to the imperfect contracting power of the segment between the internal and the external os even in normal conditions. When the placenta is implanted on or has grown into this isthmus segment it becomes very vascular and its power of contraction is practically entirely lost. After removal of the placenta the isthmus is incapable of contracting enough to arrest the hemorrhage when it has once been stretched wide. The aim in treatment, therefore, should be to avoid any stretching of the isthmus segment. The uterus therefore must be evacuated from above, preferably by abdominal cesarean section. His experience with forty cases in which treatment was applied on this principle gave only 2.5 per cent. mortality for the children while there was no mortality from hemorrhage among the mothers. Of course, the method is applicable only to the cases free from infection. In the home it must be borne in mind that any forcible dilatation of the isthmus segment is liable to entail hemorrhage and laceration. After puncture of the membranes, application of the metreurynter or version, expectant treatment should be the rule until the child is spontaneously expelled. When the hemorrhages have once been arrested, he warns expressly against saline infusion and measures to raise the blood-pressure as they are liable to start a new hemorrhage. They are indicated when the vascular system is closed by ligatures, as during an operation for tubal rupture, but not when the vessels are gaping as with placenta praevia.

Deutsche Zeitschrift für Chirurgie, Leipsic

April, CXXII, Nos. 1-2, pp. 1-170, with Index for Vols. CXI-CXX

71 Paravertebral Local Anesthesia. (Experimentelle Untersuchungen über Novokain bei Paravertebralinjektion.) S. Muroya.

72 From the Seat of War. (Chirurgische Erfahrungen aus dem Balkankriege.) W. Goebel.

73 Acute Strangulation of Intestine. (Zur Aetiologie, Symptomatologie und Pathogenese der akuten Darmstrangulation.) A. Polacco and A. Neumann.

74 Radial Dislocation of the Wrist. (Luxation der Hand radialwärts mit isolierter Luxation des Kahnbeins volarwärts.) W. Speck.

75 Fascia Grafts. (Ueber freie Fascientransplantation.) O. Warschauer.

76 Cure of Erythromelalgia by Section of Posterior Spinal Roots. (Ein durch die Foersterssche Operation erfolgreich behandelter Fall von Erythromelalgie.) J. Mayesima.

77 *Infusion of Sugar Solution in Prophylaxis of Thrombosis. F. Kuhn.

78 *Experimental Research on Acute Blood-Borne Osteomyelitis. F. L. Dumont.

79 Revolution in Treatment of Surgical Tuberculosis since Direct Sunlight Therapy has been Introduced. (Chirurgische Gedanken über die Heliotherapie, besonders bei tuberkulösen Erkrankungen im Kindesalter.) R. Leriche.

80 Cure of Tabetic Gastric Crises by Stretching the Solar Plexus. R. Leriche.

77. **Sugar Solution for Infusion in Prophylaxis of Thrombosis.**—Kuhn's recommendation of sugar solution as an improvement over the usual saline solution for proctoclysis, rinsing out the peritoneum, etc., has been already mentioned in THE JOURNAL. He here reports experimental research and clinical experience which confirm the assumption that the sugar solution checks coagulation of the blood, possesses decided nutritive value and antitoxic action, and raises the blood-pressure, seemingly regulating the heart-action. The best strength seems to be a 4 per cent. solution of grape sugar or a 7.9 per cent. solution of milk sugar; this corresponds to an isotonic solution and it is important to ensure this. He therefore has used a 4 per cent. grape sugar solution containing 0.85 per cent. cooking salt and regards this as a great improvement over other methods for warding off thrombosis. Any concentrations above or below this are liable to have a destructive action on the blood-corpuscles and induce collapse, as they upset the osmotic balance in the cells. He reaffirms that isotonic solutions of grape sugar have proved entirely harmless and, judging from the clinical experiences related, may be used to advantage in all surgical procedures. He adds that 1 gm. sugar to the kilogram of body weight seems the upper maximum limit. This amounts to about 50 gm. for an adult of average weight. By adding 40 gm. sugar to a liter of the infusion fluid, we thus have a 4 per cent. solution in the liter to be infused as the standard dose. He is inclined to agree with Schücking that other salts enhance the physiologic value of the infusion fluid, and hence now makes out his prescription as follows: Dextrose, 4 gm.; sodium saccharate, 0.04 gm.; potassium saccharate, 0.04 gm.; sodium chlorid, 0.85 gm., and 100 gm. distilled water. The literature on the subject is reviewed, the data all tending to confirm the harmlessness and peculiar efficiency of isotonic sugar solutions for subcutaneous or, preferably, intravenous administration.

Medizinische Klinik, Berlin

April 27, IX, No. 17, pp. 653-692

81 *Regulation of the Diet at Health Resorts. (Die Diät in den Kurorten.) H. Strauss.

82 *Arteriosclerosis of Kidney Arteries. (Ueber die Störungen bei der durch Arteriosklerose der Nierenarterien bedingten Schrumpfniere und deren Behandlung.) F. Hirschfeld.
83 Treatment of Curvature of the Spine. (Skoliosenbehandlung.) E. Mayer.
84 *Bladder Stones in Diabetics. (Zuckerkrankheit und Blasensteine.) B. Goldberg.
85 Balneotherapy in Heart Disease. (Vergleichende praktische Erfahrungen in der Balneotherapie der Kreislaufstörungen im Kohlensäurestahlbad und im Solbade.) Krone.
86 Mendel's Laws Govern Hemophilia. (Erklärung der Vererbungsgesetze der Hämophilie auf Grund der Mendelschen Regeln.) G. Riebold.

81. **Diet at Health Resorts.**—Strauss urges systematic regulation of the diet, according to individual conditions, as an integral part of spa treatment. He presented a resolution at the recent International Congress on Physiotherapy urging the introduction and systematic application of rational courses of diet for the sick and that physicians should send their patients only to such health resorts where the patients will get the necessary care for their diet. This resolution was unanimously adopted by the congress and the Balneologic Association has since announced that the Heinrich Brock prize next year will be awarded for the best pamphlet on the subject of warning the managers of health resorts of the importance of dietetic regulations for persons taking courses of treatment, and outlining plans by which such regulations can be introduced and enforced.

82. **Treatment of Contracted Kidney.**—Hirschfeld refers to red contracted kidney, the result of disturbances from sclerosis of the renal arteries. His experience does not indicate that this form is particularly malignant. Its most striking feature is the small output of urine; this is encountered in the contracted kidney from arteriosclerosis as well as in that from the atrophy from advancing age. It is possible to benefit materially by limiting the intake of albumin and living mostly on oatmeal and rice, with more fat. This will relieve the disturbances and the composition of the urine comes to correspond with the urine of younger persons. By reducing the protein in the food, the kidneys are spared much work.

84. **Diabetes and Bladder Stones.**—Goldberg states that in four of his eighty cases of bladder stones the lithiasis was complicated with diabetes. In each case the disturbances from the stones were ascribed to the diabetes itself and the stones had been overlooked. The treatment should be litholapaxy alone and his experience shows that this can be done without infection of the bladder.

Münchener medizinische Wochenschrift

April 29, LX, No. 17, pp. 905-960

87 Roentgentherapy of Genital and Mammary Cancers and Myomas. G. Klein and G. Hirsch.
88 Reduced Agglutination of Typhoid Bacilli in Alkaline Medium. M. Riemer.
89 Biologic Reaction in Mental Degenerates. (Ueber eine Komplementbindungsreaktion bei angeborenem Schwachsinn und anderen degenerativen Zuständen des Zentralnervensystems.) H. Froesch.
90 *Serodiagnosis of Tumors. (Ueber Serodiagnostik der Geschwülste mittelst Komplementablenkungsreaktion.) J. Halpern.
91 *Serodiagnosis of Pregnancy. (Zur Bewertung der Abderhaldenschen Schwangerschaftsreaktion.) F. Heimann.
92 Stenosis of the Small Intestine. (Bemerkungen über Dünndarmstenose.) J. E. Schmidt.
93 Fatal Peritonitis after Laminaria Dilatation. P. Hussy.
94 *Atrophic Myotonia. G. Grund. Commenced in No. 16.
95 From the Seat of War. (Vom Kriegsschauplatz in Montenegro.) E. v. Düring.

90. **Serodiagnosis of Tumors.**—Halpern reports application of von Dungern's complement deviation test in 300 cases. Of the seventy-nine carcinoma patients, 89.8 per cent. gave a positive reaction while the reaction was negative in 92.8 per cent. of fifty-six patients free from tumors. He calls attention in particular to the case of an apparently entirely healthy man whose mother had cancer of the breast; he gave a positive reaction as also the apparently healthy daughter of a woman with malignant lymphoma. Is it possible, Halpern asks, that these two healthy persons harbor a predisposition to cancer or are they in the precancerous stage?

91. **Serodiagnosis of Pregnancy.**—Heimann's experience with 100 cases confirmed in every respect Abderhalden's statements in regard to the serodiagnosis of pregnancy.

94. **Atrophic Myotonia.**—Grund reports four new cases of myotonia with atrophy of the muscles, in three men between 22 and 47 and a woman of 47, the mother of two of the other patients. The muscles most involved were those of the face and part of those in the neck and forearms. He regards it as an independent morbid entity and not merely a secondary stage of Thomsen's disease. In the familial cases, it began at the age of 10 in the boys and at 18 in the mother, and the trouble was most severe in the younger generation.

Therapeutische Monatshefte, Berlin

May, XXVII, No. 5, pp. 337-400

96 Modern Treatment of Wounds in Peace and War. Graf.
97 Plastic Restoration of the Cheek. (Vorschlag zum plastischen Ersatz der Wangenschleimhaut.) V. Schmieden.
98 Prophylaxis of Lead Poisoning in Storage Battery Works, etc. (Wie können im Betriebe von Akkumulatorenfabriken Bleivergiftungen entstehen?) E. Böttrich.
99 Propaganda for Reform. (Wünsche zur Reform des Arzneivertriebes.) E. Seel.

Therapie der Gegenwart, Berlin

May, LIV, No. 5, pp. 193-240

100 *Proctoclysis with Sugar Solution in Treatment of Diabetes. (Behandlung des Diabetes mit Zuckerklistieren.) H. Lüthje.
101 *Intravenous Infusion of Sugar Solution to Arrest Hemorrhage. (Stillung innerer Blutungen durch intravenöse Traubenzuckerinjektionen.) E. Schreiber.
102 *Extra-Uterine Pregnancy. R. Mühsam.

100. **Proctoclysis with Sugar Solution in Treatment of Diabetes.**—Lüthje has been very much pleased with his success in administering grape sugar to diabetics by rectal injection, a drop at a time, by the proctoclysis method. The sugar is absorbed in this way in diabetes much better than when taken by the mouth. He has repeatedly witnessed the subsidence of acidosis under the influence of the sugar enemas. The proportion of sugar in the blood increases under this sugar solution proctoclysis, while it remained unmodified in three persons given salt solution instead of the sugar, but otherwise with the same technic. He had other patients sip the sugar solution by the mouth, taking as long to ingest a liter as when it was given by protoclysis, but the proportion of sugar in the blood did not increase in the same way as when it was given by the rectum. This proved that it was absorbed and assimilated better from the rectum than from the alimentary tract, and that the effect could not be explained by the slow and gradual intake. Experiments on dogs showed further that much more sugar appeared afterward in the urine when an isotonic 5.4 per cent. solution of sugar was injected directly into the portal vein than when an equal amount was injected into the femoral vein. He remarks that this is very surprising to find that more sugar gets into the urine when the solution is introduced into the portal rather than into the general circulation. Arnheim, von Noorden, Bingel and others have confirmed the fact that diabetics bear sugar better by the rectum than by the mouth. With the proctoclysis technic most persons are able to absorb from the rectum from one to two liters of fluid during the day, and this with a 5.4 per cent. solution would amount to from 50 to 100 gm. of sugar a day. He has treated in this way ten patients with severe diabetes and gives the charts of two.

101. **Intravenous Sugar Solution to Arrest Internal Hemorrhage.**—Schreiber made an intravenous injection of 200 c.c. of a 5 per cent. solution of grape sugar in a patient with severe hemorrhage from the stomach, and the hemorrhages did not recur. He had a similarly favorable experience in a case of intestinal hemorrhages in typhoid, and since then has applied this measure in a number of cases of internal hemorrhage from various causes. Kausch thus infuses up to 2,000 c.c. of a 5 or 7 per cent. solution, but Schreiber has never injected over 200 c.c. of a 5 up to a 20 per cent. solution. No disturbances of any kind were observed either by Kausch or himself, and his patients did not develop glycosuria thereafter.

Von den Velden ascribes the benefit to the modification in the osmosis, the tissues being compelled to yield up to the body fluids substances which promote coagulation and thus reduce the tendency to hemorrhage. The result of the infusion of a hypertonic solution is a prompt hydremia and rise in the freezing-point of the blood, with increased diuresis. Von den Velden's research was made with hypertonic salt solution, but sugar deserves the preference over salt as the sugar has a nourishing value which is useful for patients debilitated by severe hemorrhages. The sugar solution is better than serum for hemophiliacs as there does not seem to be any danger of inducing anaphylaxis disturbances. In the one case of hemophilia in which Schreiber has tried it, the bleeding kept up the first day, but decreased the second day and by the third day the hemorrhagic tendency seemed definitely arrested; in all preceding bleeding periods the hemorrhages had kept up for a week, very severe. He adds that cane sugar seems to act the same as grape sugar and can be used instead of the latter.

102. **Extra-Uterine Pregnancy.**—Mühsam states that in the last series of 108 patients with tubal pregnancy at the Moabit Hospital there has been no mortality. Thus all these patients since May, 1909, have been saved by a prompt operation. In two of the last 145 cases the women had had a previous extra-uterine pregnancy; in another there was a fetus in both tubes. He ascribes the success of treatment to the early diagnosis and prompt operative measures, not even waiting for the patient to recover from collapse. In some cases he operated without general anesthesia as the patients were totally unconscious. In many cases the pulse did not become perceptible until hours later, notwithstanding the strongest stimulants. The women were generally between 26 and 35 and only twenty-eight had not had one or more previous pregnancies. The interval since the last pregnancy was three years and over in thirty, up to eleven or fifteen years in six cases. A history of irregular bleeding and pains and oppression in the lower abdomen is an aid in the diagnosis, and particularly a fainting fit or premonitory dizziness. But the most instructive differentiating procedure is puncture of the pouch of Douglas. In 117 of the 124 cases in which this was done in the last 145, the findings were positive—if not at once, then soon after the woman had been raised to a half-sitting position. The findings in one case were particularly instructive as the stomach region was extremely painful and the diagnosis had wavered between perforation of a gastric ulcer and necrosis of the pancreas; the blood found in the pouch of Douglas pointed to a tubal pregnancy, confirmed by the operation. The urobilin test and leukocytosis are useful in confirmation but not much reliance is placed on them. He punctures the pouch of Douglas through a speculum, pulling up the uterus with bullet forceps and puncturing directly in the middle, close to the cervix. In thirty-four cases the disturbances came on gradually and the patients were regarded as suspicious of tubal pregnancy and were kept under constant supervision until certainty could be attained. Even with these precautions rupture occurred in one woman with such profuse bleeding that although the physician was at hand and operated at once, yet the patient was unable to rally and died. A minute rupture was found at the uterus end of the tube. Any one who has passed through such an experience always afterward urges immediate operation, once a tubal pregnancy is recognized. In only nine of the thirty-four with the more gradual onset had the tubal pregnancy been diagnosed; in six the uterus had been curetted for supposed abortion. In other cases gall-stones, appendicitis, kidney-stones or peritonitis had been diagnosed. The comparatively rapid growth of a tumor on one side, with absence of fever, speak in favor of a tubal pregnancy rather than disease in the uterine adnexa.

Wiener klinische Wochenschrift, Vienna

April 24, XXVI, No. 17, pp. 649-692

103 *Biologic Test for Cancer. (Die Abderhaldensche Serumprobe auf Karzinom.) E. Epstein.
104 *Modification of Skin Reaction under Influence of Injected Serum and Colloidal Substances. F. Luithlen.
105 *Radium Treatment at St. Joachimstal. (Kurbericht für das Jahr 1912.) F. Dautwitz.
106 Vibrio in Oriental Sore. (Ueber einen Vibrionenbefund in einem Yemengeschwür.) E. Wiener.
107 Ethyl Chlorid Anesthesia of the Mental Nerve. (Kältelei-tungsanästhesie am Nervus mentalis.) A. Neumann-Kneucker.
108 *Care of Feet on Walking Tours. (Zur Behandlung des Schuhdruckes.) J. Novak.

103. **Serodiagnosis of Cancer.**—Epstein tabulates the finding in 110 persons, including 37 with cancer, to whom he applied Abderhalden's tests. The findings all confirm the latter's statements.

104. **The Skin Reaction after Injection of Serum or Colloidal Substances.**—Luithlen declares that his extensive experimental research justifies the conclusion that it may yet be possible to find some substance which has the same effect as injection of a specific serum while free from the disadvantages of serotherapy.

105. **The Radio-Active Waters at St. Joachimstal.**—This is the home of radium, and Dautwitz states that last year 1,898 persons took courses of baths in the radio-active waters. He summarizes the results, stating that in multiple sclerosis, for example, improvement was evident in about 63 per cent.; in tabes in 63 per cent.; in poliomyelitis in about 73 per cent.; in sciatica 7.14 per cent. were uninfluenced, while the others showed great improvement; in chronic rheumatism only 9.91 per cent. failed to be benefited, and 13 per cent. of those with chronic gout. The favorable effects realized have persisted to date, the longest interval four years. In many cases, he says, the benefit far surpassed that of any other previous measures in the special cases.

108. **Care of the Feet on Walking Tours, Etc.**—Novak states that blisters and erosions from the shoes can be very easily cured. Experience has shown that these lesions are not due to too narrow shoes. Tight shoes produce corns, but blisters and erosions result from rubbing, the epidermis being thus separated from the corium. The aim should be to prevent friction. This can be done by anointing the region with salve or tallow and applying a bandage which will protect the skin from all rubbing and friction. A pad of cotton spread thick with salve is applied over the lesion and above this a bandage of soft gauze is wound so tight that it cannot slip. The bandage takes up no more room than a stocking and can be worn with ordinary shoes. It is astonishing, he remarks, how the foot can be used afterward and the walking tour resumed without any further pain or disturbance of any kind from this source. If the bandage is left undisturbed two or three days, the lesion will generally be found healed over when it is removed. [Query: Would not applying a thick coat of collodion or a collodion dressing be still better?—ED.]

Zentralblatt für Chirurgie, Leipsic

May 3, XL, No. 18, pp. 681-712

109 Muscle Flap to Arrest Hemorrhage from Various Sinuses of the Dura Mater. (Zur Technik der Blutstillung an den Hirnblutleitern.) W. Mintz.
110 Technic for Fascia Grafts. (Zur Technik der Fascientransplantation.) Guleke.
111 Stomach Flap for Plastic Operation on Esophagus. (Zur Oesophagoplastik aus der Magenwand.) E. Pflaumer.

Zentralblatt für Gynäkologie, Leipsic

May 3, XXXVII, No. 18, pp. 641-680

112 Etiology of Amniotic Hydrorrhea. S. Dietrich.
113 Mishaps from Ventrofixation; Two Cases. Allmann.
114 Mishaps from Vaginofixation. (Placenta praevia centralis, kompliziert mit absolutem Wehenmangel und Querlage nach Vaginaefixatio.) H. v. Ortenberg. (Schwere Geburten nach Vaginafixur.) Uthmöller.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 1, XXXIV, No. 52, pp. 543-550

115 *Extension in Treatment of Sciatica. (Metodo di Carnot nella sciatica.) G. Tanfani.

115. **Extension in Treatment of Sciatica.**—Great benefit and the final cure of severe chronic sciatica is reported as following extension of the limb by the same technic as for a fracture of the femur. The patient was a man of 57 and the pain was relieved within a few hours after the extension

had been applied with a weight of 3 kgm. The weight was gradually increased each day until 21 kgm. (about 46 pounds) could be borne for two hours at a time by the end of the second week. Tanfani remarks that the possibility of graduating the extension is a special advantage of this method of stretching the sciatic nerve. It proved brilliantly successful in his case; the extension was kept up for sixteen days.

Policlinico, Rome

May 1, XX, No. 18, pp. 621-660

116 Phagedenic Ulcers in Tripoli. (L'ulcera fagedenica a Tripoli.) D. A. Mazzolani. Commenced in No. 17.

Riforma Medica, Naples

April 26, XXIX, No. 17, pp. 449-476

117 Restoration of Urethra with Segment of Vein. (Ricerche sperimentali sul trapianti delle vene nell' uretra.) F. Cuturi.

118 Intravenous Injection of Ergot and Morphin in Hemoptysis. (L'iniezione endovenosa di ergotina e di morfina nelle emottisi tubercolari.) C. Garmagnano.

Medizinskoe Obosrienie, Moscow

LXXIX, No. 1, pp. 1-100

119 *Trypsin in the Stomach. B. Kriloff.

120 *Eosinophilia in Diagnosis and Prognosis of Pulmonary Tuberculosis. I. Chuprin.

121 *Tumors of the Carotid Gland. N. Sinushin.

122 Functions of the Great Omentum. M. Shtutzer.

No. 2, pp. 101-204

123 *Dosage of Antitoxin in Diphtheria. A. Lund and N. Uspensky.

124 Bacteriologic Diagnosis of Diphtheria. S. Teumin.

No. 3, pp. 205-296

125 *Atropin in Stomach Disease. D. Pletneff.

126 *Improved Methods for Diagnosis of Gonococcus Infection. R. Fronstein.

127 *Case of Sporotrichosis; Third on Record in Russia. M. Bremener.

128 Kinking of the Sigmoid Flexure. (O zavorotye S. Romani.) N. Michelson.

119. **Trypsin in the Stomach Content.**—Kriloff studied a number of patients with different gastro-intestinal disorders for the purpose of determining in which conditions and in what amounts trypsin is found in the stomach. He did not attempt to establish the diagnostic value of its presence or absence. Gross' method for determining the presence of trypsin proved superior to other methods. This consists in preparing a 1:1000 solution of pure casein in 1:1000 solution of sodium carbonate. About 10 c.c. of this solution is placed in test-tubes to which the fluid under examination is added. In the presence of trypsin, the casein becomes digested. The stomach contents were removed an hour after a Boas test breakfast or after 75 c.c. of olive oil had been given. Of fifty-one analyses made on thirty-two patients, positive results were obtained in 63.3 per cent. In achylia gastrica the trypsin rate was found to be high, but there was no trypsin found in the cases of hysterical achylia and gastralgia. With cancer, trypsin is always present, especially with cancer of the pylorus, and in other cases of pyloric stenosis. The trypsin was present in chronic gastritis, but missing with cirrhosis of the liver, and greatly diminished with gastric ulcer. Parallel tests for trypsin, pepsin and the acidity of the stomach showed that the higher the trypsin rate the lower is that of acidity and of pepsin. As a rule the amount of trypsin in the stomach contents is small. The findings in the thirty-two cases are instructively tabulated for comparison.

120. **Eosinophilia in Diagnosis and Prognosis of Pulmonary Tuberculosis.**—Chuprin found that eosinophilia in the blood and sputum of patients with tuberculosis of the respiratory organs may be of diagnostic and prognostic value. Thus, in favorable cases of tuberculosis the eosinophils in the sputum and blood increase in numbers. He illustrates this statement by a number of clinical cases which showed a marked increase in these blood-cells when there was improvement in the patient's health, and their absence or marked decrease when there was aggravation of the disease. Diminishing proportions of eosinophils in the blood indicates spreading of the process or possible secondary infection. The eosinophilia in tuberculosis is due, in his opinion, to the same factors as in emphysema, asthma and acute and chronic bronchitis, namely, to lack of oxygen and ensuing chronic asphyxia. The result is decomposition of hemoglobin.

121. **Tumors of Carotid Gland.**—Sinushin describes the carotid gland and its tumors. It is situated at the bifurcation of the carotid artery and its tumors are usually single, the size of a hen's egg, reaching sometimes as high as the mastoid process. Sometimes they are pierced by the artery. When compressed, all the pulsation stops. Laterally they can be moved, but not vertically, nor during the act of swallowing. The sympathetic and vagus nerves are not involved. Such tumors have never been observed before the age of 18. They occur usually between 25 and 30, mostly in women, and on the left side. The growth is slow, causing no subjective symptoms. Operation gives a high mortality (20 per cent.), owing to the cerebral complications liable from ligation of the carotid artery. Yet the possibility of malignant degeneration of the carotid tumor and metastasis renders imperative their operative removal. The carotid artery can be compressed, but must not be ligated; only the external carotid should be ligated during the operation.

123. **Diphtheria.**—Lund and Uspensky report their experience with antitoxin treatment of diphtheria in a large Moscow hospital during the last three years, a total of 2,001 cases, with a mortality of 301. They lay great stress on the dosage. In the mild cases the average dose of antitoxin was about 3,000 units; improvement was evident after ten or twelve hours; repetition of injections was unnecessary; no mortality. In the severe cases, with diffuse involvement of the throat, repetition of the injections of antitoxin was necessary from twelve to twenty-four hours after the first treatment. Of the 422 in this class, seventeen patients died (myocarditis, pneumonia, nephritis). The average dose was 5,500 units, and it usually was followed by several more. This class of cases shows a slight decrease of mortality when compared with that of the previous three years. In the severest type of cases, intubation had to be resorted to several times. Secondary tracheotomy was done in fourteen cases, with 50 per cent. mortality. A primary tracheotomy, without preliminary intubation, was done in severe lesions of the pharynx, edema of the neck and severe asphyxia, and antitoxin was given in large doses (8,834) repeated several times. In this last class of cases the effect of the antitoxin was rather slow; otherwise its effect was marked almost in every case of diphtheria. Unfortunately in the epidemics of diphtheria for the last three years the severer forms were exceptionally numerous, averaging 34.5 per cent. (in 1897 25 per cent).

Excluding the gravest cases, the mortality from diphtheria was considerably lower, chiefly because of larger doses. The dosage for the graver cases was from 8,000 to 24,000 up to 60,000 units, given in ten to fifteen doses. The effect of the antitoxin became evident on the third day if the patient survived. The mortality rate even for these grave cases was lower than in former years (31.7 per cent. as compared with 49.7 per cent. mortality, 1897-99), thanks to the increased dosage. In the laryngeal cases, 300 patients were treated with antitoxin alone, with 5 per cent. mortality. Of 347 that were operated on, 106 died. In 92.8 per cent. intubation was done; in fourteen cases secondary, and in eleven cases primary tracheotomy. Intubation was done at the first signs of suffocation, not always waiting for this. Epinephrin was given in cardiac weakness and when the blood-pressure was low. It proved a life-saving aid especially in those cases of diphtheria in which paralysis developed the seventh or ninth day of the disease, followed by a rapid drop in the blood-pressure.

125. **Atropin in Stomach Disease.**—Pletneff reports his experience with atropin in twenty-eight cases of various stomach disorders. The dose was 0.001 gm. (1/60 grain) hypodermically, once a day, for a period of nine days, and in some cases two weeks. He found that atropin caused decrease of gastric secretion, decrease of its acidity, and reduced the pain and spasmodic contraction, the results corresponding

with those of Riegel's experiments on animals. The reduction in secretory functioning causes diminished acidity, which in its turn puts an end to the pylorospasm and pain. The therapeutic effects of atropin are but temporary, its action being symptomatic only; in this regard it is much superior to morphin.

126. **Improved Methods for Diagnosis of Gonococcus Infection.**—Fronstein says that a gonococcus vaccine injected hypodermically gives a general and focal reaction in patients with any gonorrheal infection. The propc. dosage is of paramount importance, but must be individualized to conform to the acute or chronic form, the stage of the process and time of the preparation of the vaccine. Fronstein used several commercial vaccines. When injected into two healthy persons in the amount of 0.4 gm. there was no reaction except pain, while two gonorrheal patients responded after sixteen hours with general (elevated temperature) and local manifestations. There was no reaction whatever in persons who had had gonorrhea at one time but had entirely recovered. The reaction was called positive when about seven hours after the injection there was an elevation of temperature of 0.7 C., accompanied by local manifestations. In fourteen of thirty cases the latter consisted in increased urethral secretion in which gonococci could be found, while before the injection of the vaccine they could not be found in the secretion. In five cases there was, besides the elevation of temperature, increased pain in the testicles. This positive result was confirmed by the presence of gonococci in the urethral secretion after the patient was subjected to proper treatment. In two cases there was after the vaccine injection pain in the joints that had been involved three years previously. In four cases there was no reaction at all, and the diagnosis of gonorrhea was rejected. Fronstein comes to the conclusion that gonorrheal vaccination ought to be looked on as a standard diagnostic method in gonorrheal lesions.

127. **Sporotrichosis.**—Bremcner gives an illustrated description of a case of sporotrichosis in a woman of 35, the first symptoms having been observed ten years before. In all the few cases on record a complete cure was realized in a few weeks under large doses of potassium iodid. (Bremener says that the first case on record was published by Schenk in America in 1898; the third case—the first in Europe—not until 1903, thus acknowledging American priority.)

Semana Medica, Buenos Aires

April 10, XX, No. 15, pp. 584-908

129 *Walking Typhoid. (La forma ambulatoria de la fiebre tifoidea.) A. A. Oneta.

129. **Walking Typhoid.**—Oneto gives a historical sketch of this form of typhoid and reports two instructive cases in men. In the first case intense headache was almost the only symptom for a time; the agglutination test applied on three occasions gave a constantly negative response; influenza seemed the presumptive diagnosis, when suddenly the twelfth day there was a hemorrhage of a pint of blood from the intestines, recurring the next day, and two days later intense pain in the intestines requiring morphin. At no time did the temperature go above 37 C. until the sixteenth day, when enemas were given which evacuated the bowels and relieved the pains, but then the temperature ran up to 39 C. and the agglutination test gave positive findings. The rest of the course was that of an ordinary mild typhoid. As typhoid fever owes its principal danger to the complications, and as in the walking cases nothing is done to avert these complications, the prognosis of this form of typhoid, he says, is always grave. He discusses the differential points which permit exclusion of duodenal ulcer. Ulcerative colitis, influenza or gastritis may be deceptively simulated by an afebrile typhoid at first.

Hospitalstidende, Copenhagen

April 30, LVI, No. 18, pp. 473-504

130 *Nematodes in Cancer in Rats' Stomachs. (Undersøgelser over en Nematode—Spiroptera sp. n.—og dens Evne til at fremkalde papillomatose og carcinomatose Svulster i Rottens Ventrikel.) J. Fibiger. Commenced in No. 16.

131 Gastric Secretion during Digestion. II. (Undersøgelser over Ventrikelsekretionen under Fordøjelsens Forløb. II.) J. P. Gregersen.

130. **Cancer in Rats Induced by Feeding with Nematodes.**—Fibiger's article is profusely illustrated. It is otherwise practically the same as the one reviewed in THE JOURNAL, March 22, 1913, p. 948, with editorial comment p. 1077.

Nordiskt Medicinskt Arkiv, Stockholm

XLV, Medical Section, No. 3, last indexed March 15, p. 87

132 *Prognosis of Chronic Over-Exertion of Heart in Athletes. (Die chronischen Anstrengungsveränderungen des Herzens.) I. Jundell.

133 Action and Fate of Iodin in the Body. (Om två eliminationstyper af jod och två deremot svarande väsentligt olika arter af jodverkan.—Undersökning angående en metod att återställa normalt blodtryck.) C. J. Enebuske. Concluded in No. 4.

134 *Cerebellar Motor Symptoms in Myxedema; Four Cases. G. Söderbergh.

132. **Effect on the Heart of Long Continued Excessive Exertion.**—Jundell says that the dilated heart of long continued extremely severe exercise or manual labor does not seem to have been investigated years afterward, and he here presents a contribution in this line. He recently examined with orthodiagraphy, that is, roentgenoscopy with the rays parallel, ten men who years before had been noted athletes, winning many prizes, and then for a series of years had ceased their athletic work and had devoted their time to mercantile and other business. The findings show that when the heart is not subjected to the strain of alcohol or syphilis, it recuperates and returns in time to the normal size as a rule. Only one of the ten men had a trace of albumin in the urine, and this man had passed through a brief illness consecutive to twenty-four hours' exposure to cold and wet on a sailing trip. The urine was normal in all the others and also the heart findings. It is interesting to note that three of the men had had measles in youth; three scarlet fever and two had had no children's diseases; two had had typhoid in youth, one in this latter group belonging also in the scarlet fever group, and this man's heart was unusually large but the functional findings were normal, the sounds pure and the pulse normal. The roentgenoscopic findings are given for each, with the normal standard for each measurement added for comparison. Jundell warns that measurements of athletes taken just before and after competitive sporting events are not a true index of actual conditions as the excitement and effect of extra training modify the findings. His findings a dozen years more or less after the active exercise has been given up, failed to reveal that the former chronic over-exertion had induced any tendency to disease later. The men now are 25, 29, 33, 36, up to 48 years old; some of them gave up their athletics on account of development of a tendency to hernia.

134. **Cerebellar Symptoms in Myxedema.**—Söderbergh's patients were a man of 50 and a woman of 52 in the last two of the four cases reported, and the disturbances in the gait and other motor functioning in all the cases subsided under thyroid treatment of the myxedema which had developed during the last ten and four years, respectively. Both had a tendency to catalepsy, retaining without fatigue for five minutes the position suggested by Babinski as a test for cerebellar catalepsy. The symptoms promptly disappeared under the thyroid treatment but the mental torpor in the woman did not seem to be modified.

Ugeskrift for Læger, Copenhagen

April 24, LXXV, No. 17, pp. 659-704

135 Treatment of Spastic Paralysis with Both Section of Spinal Roots and Operation to Reduce Force of Antagonist Muscles. (Om et Tilfælde af spastisk Paralyse, behandlet med Foerster's og Stoffel's Operationer.) H. S. Billmann.

136 Favorable Experiences with Babcock's Subcutaneous Extraction Method of Treating Varicose Veins. (Om Babcock's Venexkstraktion.) H. S. Billmann.

137 Transmission of Scabies from Horse to Man; Sixteen Cases. (Hestefnat overført paa Mennesker.) V. Holm.

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J. A. Witherspoon

PRESIDENT AMERICAN MEDICAL ASSOCIATION, 1913-1914

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